No.01

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OKIPAGE 8w Lite(OEL)/OKIPAGE 8z(ODA/INT)
LED Page Printer
Maintenance Manual

[Rev. 5]

Related drawings

Drawing No.	Name
41701301TL	OP8w Lite(OEL)/OP8z(ODA/INT) Disassembly for Maintenance
41701301TR	OP8w Lite(OEL)/OP8z(ODA/INT) RSPL

BOM | Use for | Certification Body

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PREFACE

This Maintenance Manual describes the field maintenance methods for LED Page Printers.

This manual is written for use by service persons. Please note that you should refer to the Printer Handbook for the handling and operating methods of the equipment.

CONTENTS

1. CONFIGURATION 6

1.1 System Configuration 6
1.2 Printer Configuration 7
1.3 Specification 8
1.4 Safety Standards 10
1.4.1 Certification Label 10
1.4.2 Warning Label 10

2. OPERATION DESCRIPTION 11

2.1 Main Control Board 12
2.2 Power Supply Unit 13
2.3 High-Voltage Power Supply Board 13
2.4 Electro-Photographic Processor 15
2.5 Electro-Photographic Process 18
2.5.1 Explanation of Each Process Operation 20
2.6 Paper Jam Detection 25
2.7 Toner Low Detection 27
2.8 Cover Open 28
2.9 Detecting I/D Unit existence 28

3. PARTS REPLACEMENT 31

3.1 Precautions for Parts Replacement 31
3.2 Parts Layout 33
3.3 Replacing Parts 36
3.3.1 Hopper Plate 36
3.3.2 LED Head and Head Spring 37
3.3.3 Transfer Roller 38
3.3.4 How to remove Cover Upper Assy 39
3.3.5 Upper Cover Assy 40
3.3.6 High-Voltage Power Supply Board (P3H) 41
3.3.7 Top Cover Assy and Flat Cable Assy 42
3.3.8 Paper Holder 43
3.3.9 Side Plate M and Idle Gear 44
3.3.10 Heat Assy 45
3.3.11 Drive Shaft E (Eject) and Eject Roller 46
3.3.12 Pressure Roller B (Back Up Roller) 47
3.3.13 Separator Guide 48
3.3.14 Pulse Motor (Main) 50
3.3.15 Hopping Shaft Assy 51
3.3.16 Regist Roller 52
3.3.17 Paper Sensor E, Paper Sensor Exit and Toner Sensor Assy 53
3.3.18 Base Plate 54

4. ADJUSTMENT 55

4.1 Adjustment Types and Functions 55
4.1.1 Printer Driver 55
4.1.2 Engine Maintenance Utility 55
4.2 Adjustment When Replacing a Part 56
4.2.1 Setting LED Head Drive Time 56
4.2.2 Uploading and Downloading EEPROM Data 57

5. PERIODICAL MAINTENANCE 58

5.1 Periodical Replacement Parts 58
5.2 Cleaning 58
5.2.1 Cleaning the LED Lens Array 58

6. TROUBLESHOOTING PROCEDURES 60

6.1 Troubleshooting Tips 60
6.2 Check Points Before Correcting Image Problems 60
6.3 Notes When Correcting Image Problems 60
6.4 Preparation Before Troubleshooting 60
6.5 Troubleshooting 61
6.5.1 Status Monitor Message List 61
6.5.2 Status Message Troubleshooting 65
6.5.3 Image Troubleshooting 71

7. WIRING DIAGRAM 80

7.1 Interconnect Signal Diagram 80
7.2 PCB Layout 81
7.2.1 Main Control Board (U8S PCB) 81
7.2.2 High-Voltage Power Supply Board 82

APPENDIX A LOCAL PRINTING/ DEMO PAGE PRINTING 83

APPENDIX B PARALLEL INTERFACE 84

APPENDIX C UNIVERSAL SERIAL BUS (USB) 87

APPENDIX D MAINTENANCE UTILITY MANUAL 89

1. CONFIGURATION

1.1 System Configuration

The OKIPAGE 8w Lite/8z consists of a control block, a power supply unit, and an engine block. (See Figure 1-1.)

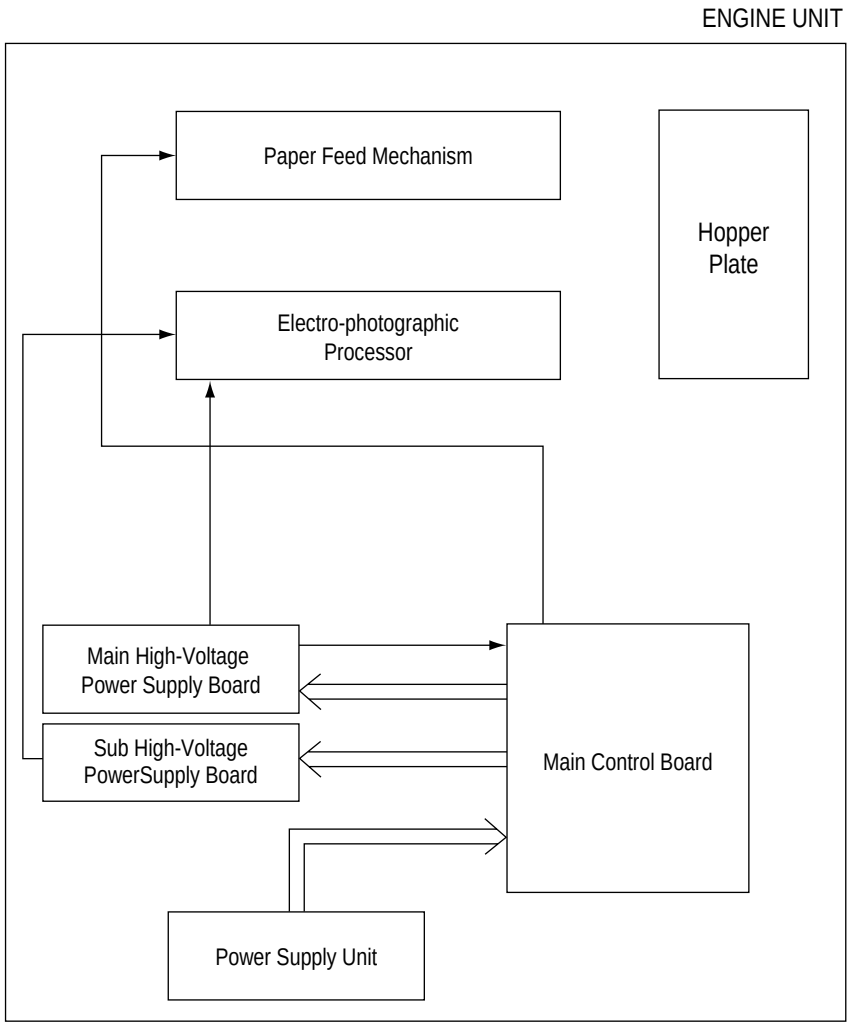


Figure 1-1

1.2 Printer Configuration

The printer unit consists of the following five hardware components:

- Electro-Photographic Processor
- Paper Feeder
- Main Control Board
- High-Voltage Power Supply Board (two Boards)
- Power Supply Unit

Figure 1-2 is the configuration of the printer unit.

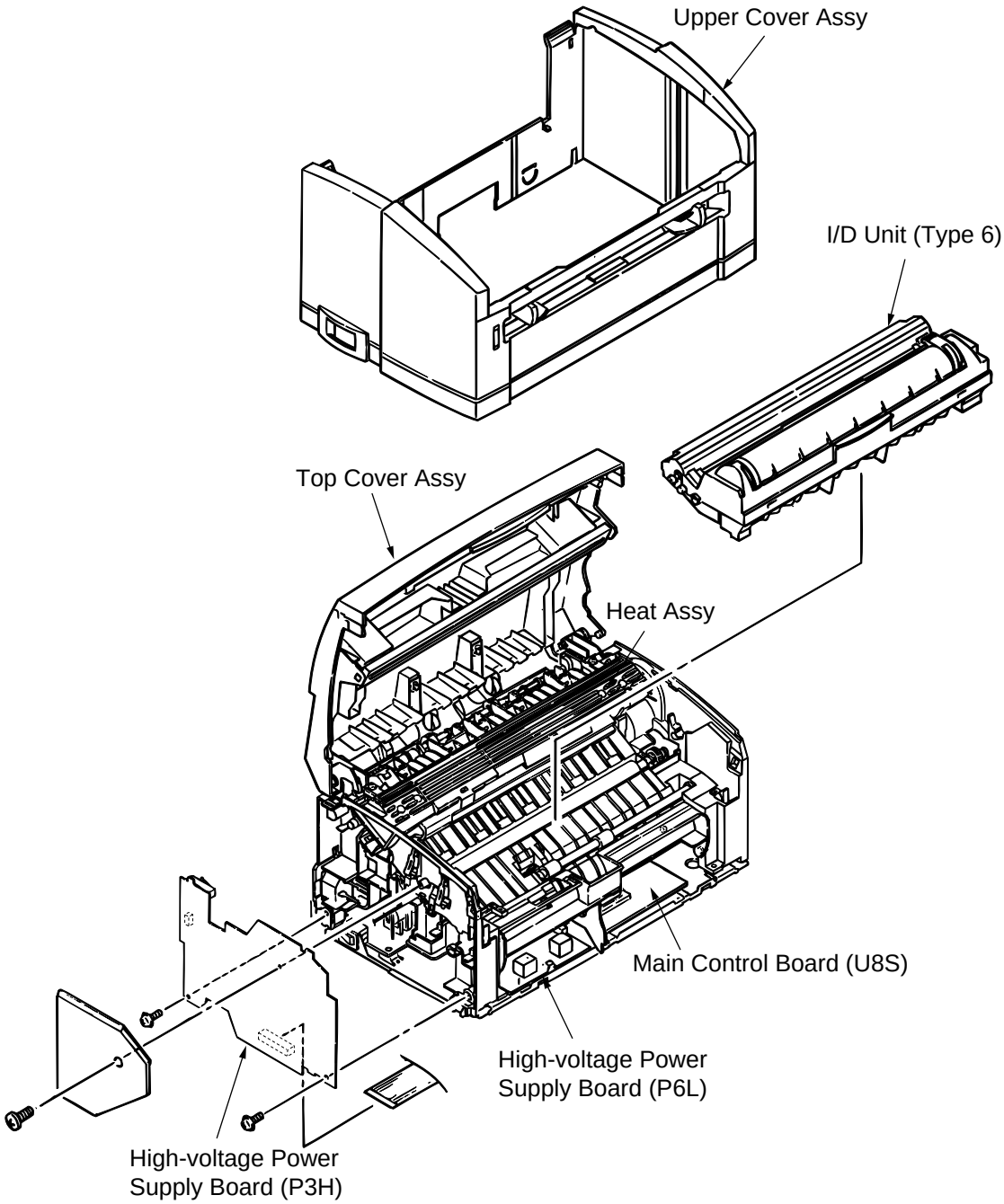


Figure 1-2

1.3 Specification

(1)	Type	Desktop
(2)	Outside dimensions (excludes protruding portion)	Height 6.72” (170 mm) Width 12.74” (324 mm) Depth 7.90” (207 mm)
(3)	Weight	4.2 kg (with Image Drum Cartridge and Toner Cartridge)
(4)	Development method Exposure method	Dry non-magnetic development system LED stationary head
(5)	Paper	<Type> • Standard paper – Xerox 4200 (20 lbs) • Application paper (manual face-up feed) – Label – Envelope (24 to 28lb) – OHP paper (Transparency) <Size> 14" (355.6 mm) × 8.5" (215.9 mm) (Max.) 5" (127mm) × 3" (76.2mm) (Min.) <Thickness> – Automatic feed: 16 to 28 lbs (60 to 105 g/m^2) – Manual feed: Label, Envelope, OHP paper (transparency), 16 to 32 lbs (60 to 120g/m^2)
(6)	Printing speed	First print: 13 seconds (A4) (after warm-up) Continuous print: 8.1 sheets/minute (Letter) 7.7 sheets/minute (A4) (Without cleaning period of time at each 8th pages.) Warm-up time: 35 seconds (at room temperature 77 ˚F (25 ˚C))
(7)	Paper feeding method	Automatic paper feed or manual paper feed
(8)	Paper delivery method	Face up
(9)	Resolution	300 × 300, 300 × 1,200 dpi
(10)	Power input	120 VAC +55%, -15% (for ODA) 230 VAC ±10% (for OEL / ODA / INT)
(11)	Power consumption	Peak : Approx. 430W Typical operation : Approx. 150W Idle : Approx. 45W Power save mode : Approx. 4.5W

(12) Temperature and humidity

	Temperature	Humidity
During operation	10 to 32 ˚C	20 to 80% RH (relative humidity)
In storage	–10 to +43 ˚C	10 to 90% RH (relative humidity) No condensation is permissible.

Caution: Temperature and humidity in storage are measured with the OKIPAGE 8w Lite/ 8z being packed; they are valid for one year.

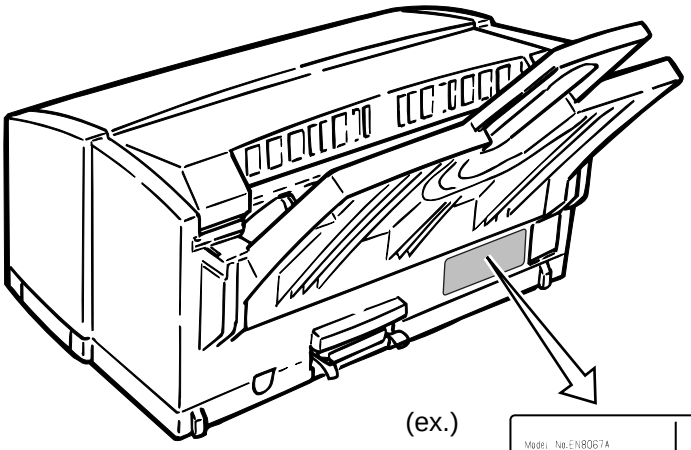
(13) Noise (conformity with ANSI)
During operation: Avg. 50 dB (A), slow (without peak sounds)
Standby: Background level

(14) Consumables
Toner cartridge kit 1,500 (5% duty) ····· 45g cartridge kit
Image drum cartridge 10,000 (at continuous printing)

1.4 Safety Standards

1.4.1 Certification Label

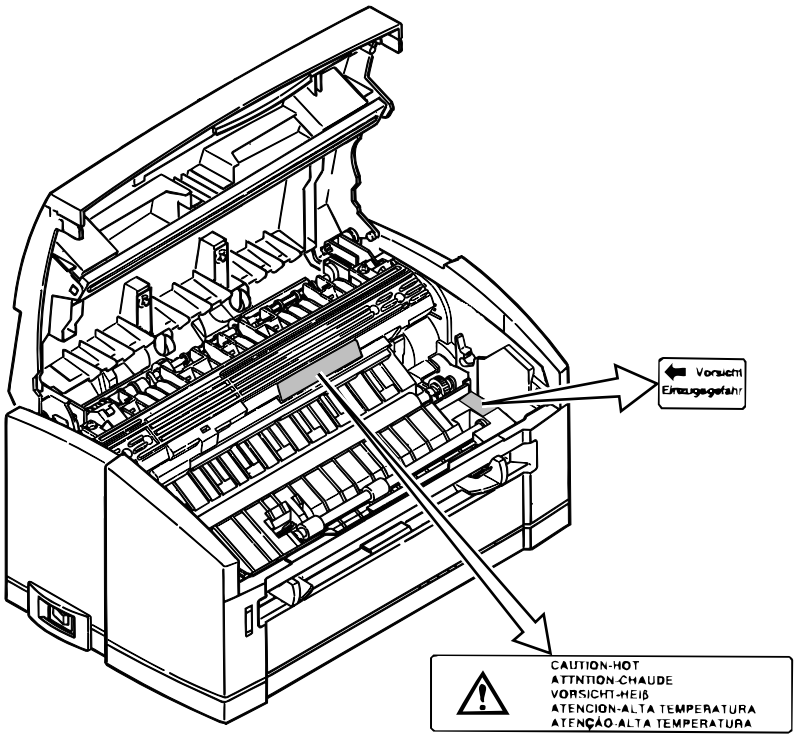
The safety certification label is affixed to the following location of the OKIPAGE 8w Lite/8z.


(ex.)
Model No.EN8067A
120V~ 50/60Hz 4A
Oki Data Corporation
Tested To Comply With FCC Standards
FOR HOME OR OFFICE USE
LISTED
E135780
NWGQ
6K00
OKI
This Class(B) digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la classe(B) respecte toutes les exigences du Réglement sur le matériel brouilleur du Canada.

1.4.2 Warning Label

Warning labels are affixed to the locations that may cause bodily injury.

During maintenance, do work with enough care while following instructions on these warning labels.



2. OPERATION DESCRIPTION

The OKIPAGE 8w Lite/8z consists of a main control board, two high-voltage power supply board, a power supply unit, and an electro-photographic processor. The OKIPAGE 8w Lite/8z receives print data from a higher-level interface and sequentially stores it in memory. The OKIPAGE 8w Lite/8z decodes and edits the received data while storing print data from the interface in memory. It sequentially transfers the edited data to the LED head for each dot line. The electro-photographic processor then prints the data on sheets of paper.

The display of the higher-level host is used for device operation and status display.

Figure 2-1 is the block diagram of the OKIPAGE 8w Lite/8z.

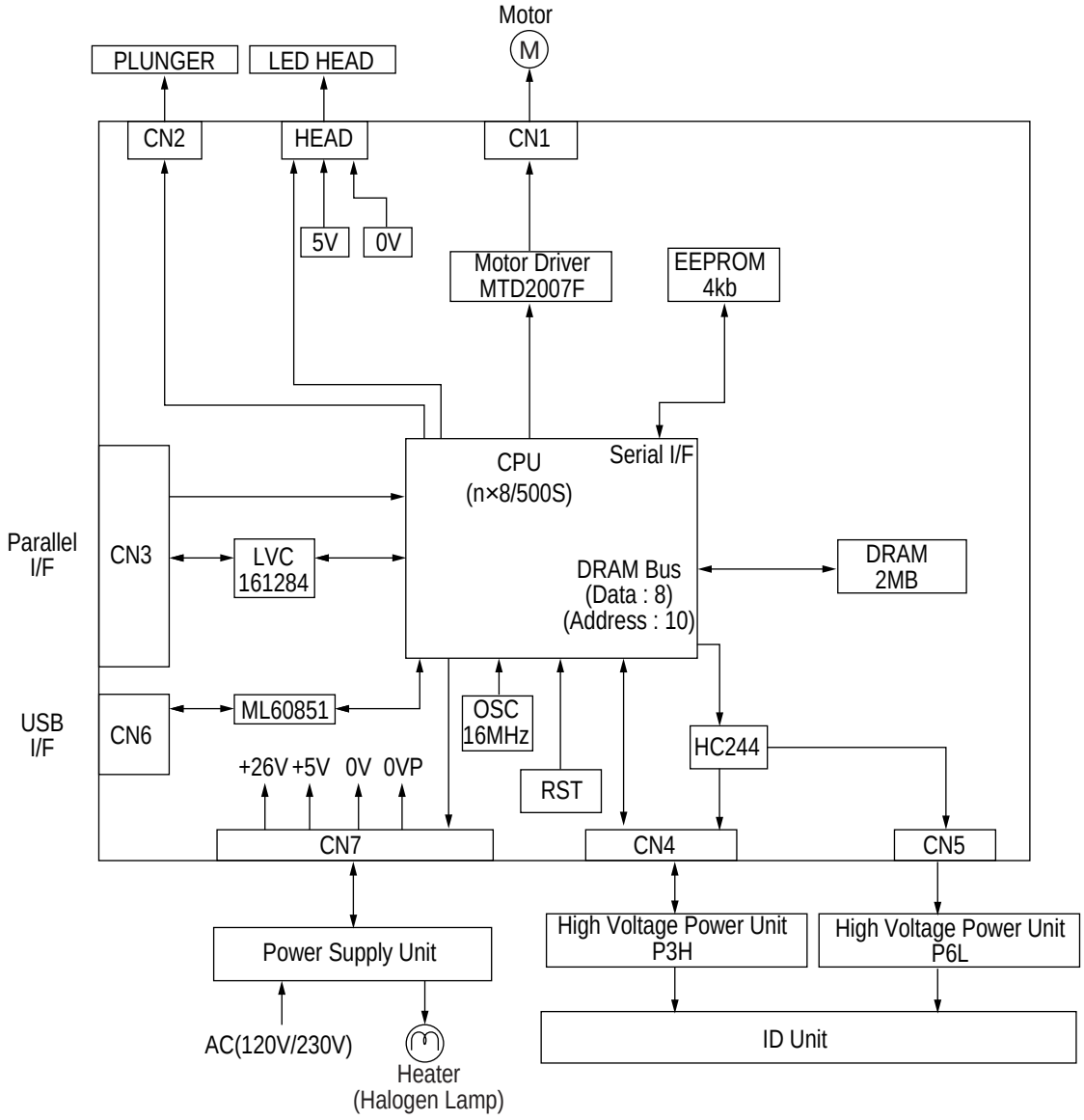


Figure 2-1 Block Diagram

2.1 Main Control Board

The main control board consists of a one-chip CPU (include a program ROM), a DRAM, an EEPROM, a host interface circuit, and a mechanism driving circuit. The mechanism driving circuit consists of a LED head, a main motor, and an electromagnetic clutch.

(1) One-chip CPU (include a program ROM)

The one-chip CPU is a custom CPU (16-bit internal bus, 16-bit external bus, 16-MHz clock) incorporating mask ROM and CPU peripheral devices. This CPU has the functions listed in the table below.

Built-in Device	Function
DRAM controller	Controls DRAM.
DMA controller	Transfers image data from Parallel I/F and USB I/F to DRAM, from DRAM to a video output port and between CPU and DRAM.
Parallel interface controller	Controls the parallel interface.
Video output port LED STB output port	Controls LED head.
Timer	Generates various control timings for monitoring paper feeding and a paper size.
I/O port	Inputs and outputs the sensor signals and motor signals, etc. Also performs I/O for EEPROM.
A/D converter	Inputs the feedback signals from a high-voltage generation circuit and thermistor signal.

(2) Program ROM

Program ROM contains a program for the equipment. The program ROM is included in the CPU.
For details PCB Layout see Section 7.2.1.

(3) DRAM

DRAM is used as resident memory.

(4) EEPROM

EEPROM holds the following data:
- Menu data
- Counter value
- Adjustment value

(5) Parallel interface

The parallel interface receives parallel data from the host; it conforms to the Centronics specification. IEEE-1284 B: – directional parallel is supported.

(6) USB interface

USB interface receives serial data from the host.

2.2 Power Supply Unit

The power supply unit supplies +5V and +26V to the main control board according to 120VAC/ 230VAC.

Output voltage	Application
+5 V	Used to generate a logic circuit and a high voltage.
+26V	Used to drive the motor and electromagnetic clutch.

The power supply unit also contains a heater drive circuit.

2.3 High-Voltage Power Supply Board

(1) High-Voltage power supply circuit

The high-voltage power supply circuit generates the following voltages required for the electro-photographic processor from +5V according to the control sequence from the main control board. When the cover is open, +5V supply is automatically interrupted to stop high-voltage output.

Output	Voltage	Application	Remarks
CH	–1.3 KV	Voltage to be applied to a charge roller.	P3H-PCB
DB	–265 V/+265 V	Voltage to be applied to a developing roller.	P3H-PCB
SB	–550 V/ 0 V	Voltage to be applied to a sponge roller.	P3H-PCB
CB	+400 V/–1.35 KV	Voltage to be applied to a cleaning roller.	P6L-PCB
TR	+500 V ~ +3.5 KV/–750 V	Voltage to be applied to a transfer roller.	P3H-PCB

Caution: The TR voltage varies with medium and transfer roller impedance.

(2) Sensors

The high-voltage power supply board consists of the high-voltage power supply circuit that supplies power to the electro-photographic processor system and the photosensor that detects a paper feeding system and toners.

Figure 2-2 shows the sensor layout drawing.

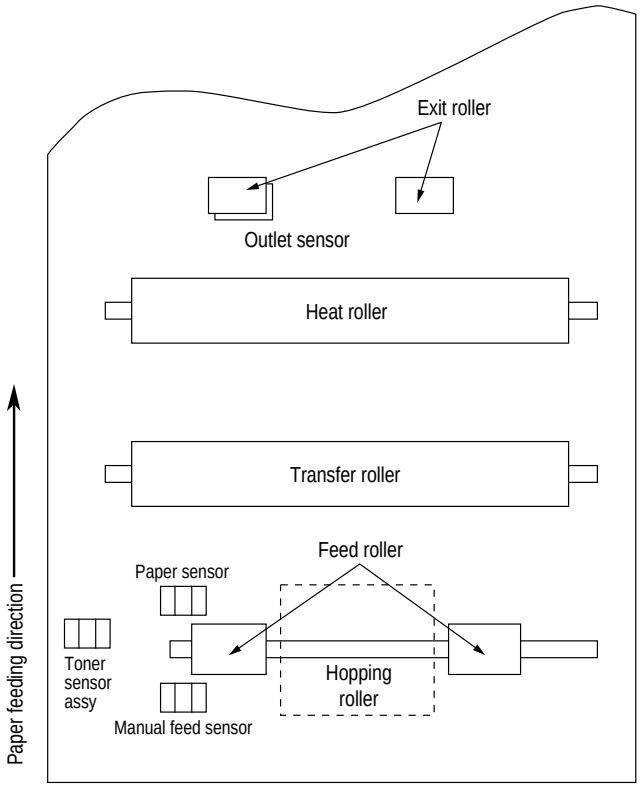


Figure 2-2

Sensor	Function	Sensing State
Manual feed sensor	Monitors whether paper was inserted into the manual feed sensor section.	ON : Paper exists. OFF : No paper exists.
Paper sensor	Detects the leading part of the paper. Monitors paper feeding.	ON : Paper exists. OFF : No paper exists.
Outlet sensor	Monitors paper feeding and the paper size according to the paper sensor arrival and passing time.	ON : Paper exists. OFF : No paper exists.
Toner sensor	Detects the low toner status.	ON (long) : Toner low OFF (short) : Toner High

2.4 Electro-Photographic Processor

The electro-photographic processor prints out the image data to be sent from the main control board on sheets of paper. Figure 2-3 shows the layout drawing of the electro-photographic processor.

(1) Image drum unit

The image drum unit makes a toner adhere to the formed electrostatic latent image with static electricity. This electrostatic latent image is formed by the lights irradiated from LED heads.

(2) Electromagnetic clutch

The electromagnetic clutch controls the rotation of the hopping roller according to signals from the control block.

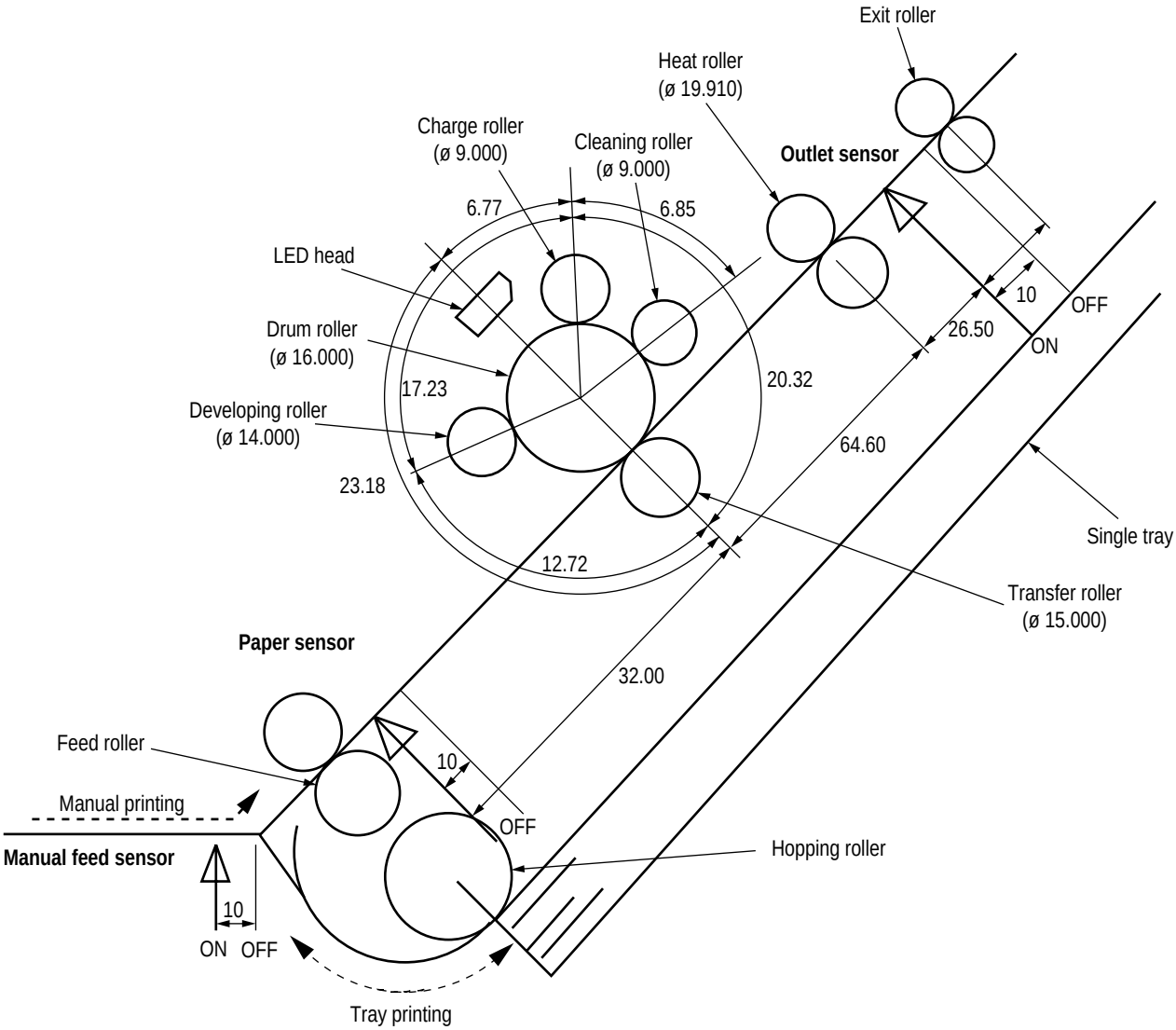


Figure 2-3 Layout Drawing of Electro-Photographic Processor

(3) Pulse motor (Main)

This pulse motor of 48 steps/rotation is two-phase excited by the signal from the main control board; it performs feeding control by switching normal rotation to reverse rotation or vice versa and turning on/off the electromagnetic clutch. The relationship between the main motor, electromagnetic clutch, resist gear, drum gear, hopping roller is shown in the table below and on the subsequent pages.

Main Motor	Electromagnetic Clutch	Hopping Roller	Regist Gear	Drum Gear	Operation
Normal rotation	OFF	Non-rotation	Non-rotation	Rotation	Warm-up
Reverse rotation	ON	Rotation	Rotation	Rotation	Hopping
	OFF	Non-rotation	Rotation	Rotation	Prinitng

(4) LED head

The shift and latch registers receive image data from the main control board for each dot line. 2,496 LEDs are driven to radiate the image drum.

(5) Heat Assy

The heat Assy consists of a heater, a heat roller, a thermistor, and a thermostat.

The power supply unit supplies AC voltage to the heater according to the HEATON signal from the main control board to heat the heat roller. The main control board monitors the heat roller temperature via the thermistor and keeps the temperature constant by turning on/off the heater AC voltage supply.

If the heat roller temperature rises abnormally, the thermostat of the heater voltage supply circuit functions to forcibly suspend the AC voltage supply.

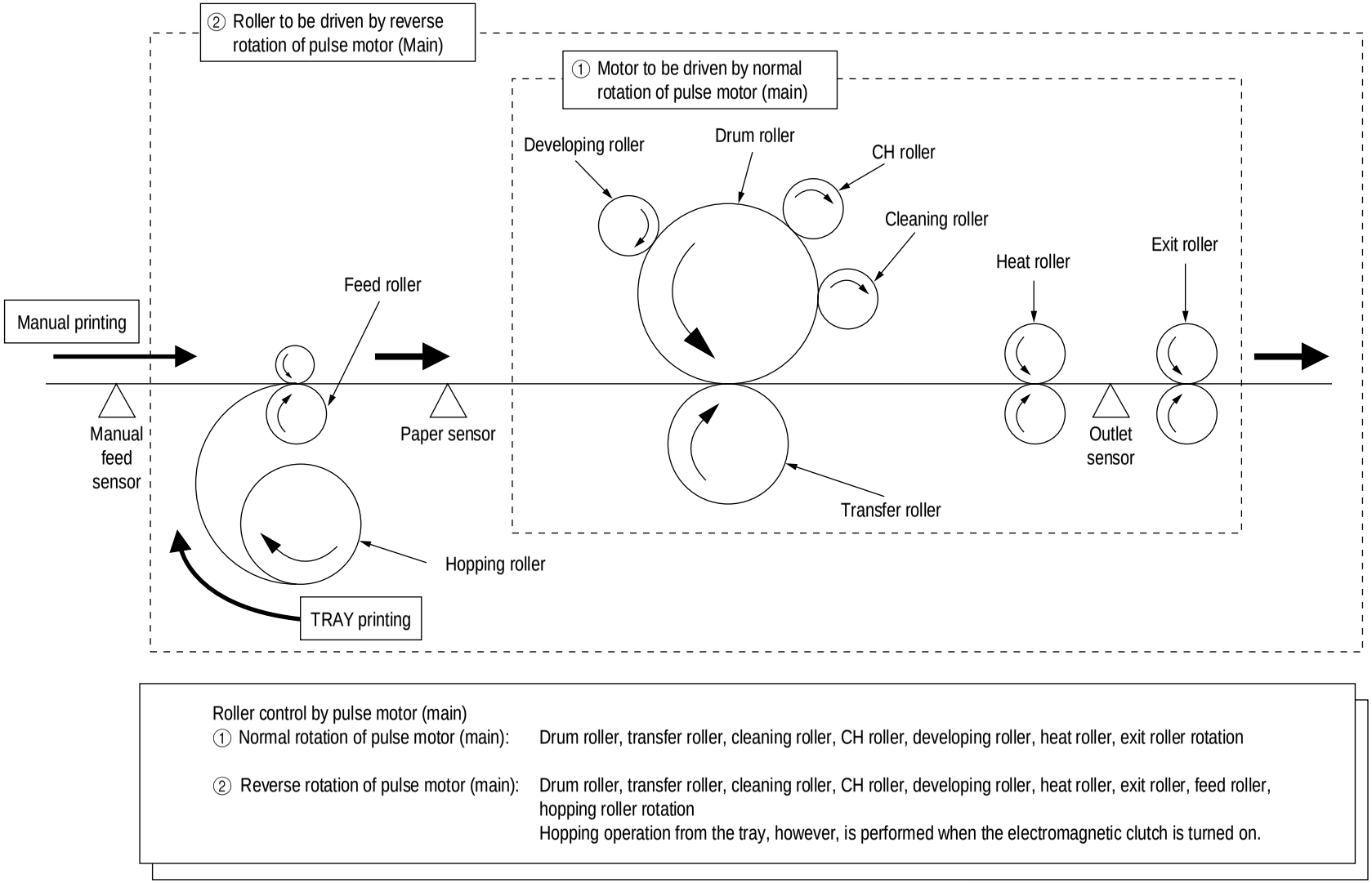

② Roller to be driven by reverse rotation of pulse motor (Main)
① Motor to be driven by normal rotation of pulse motor (main)
Developing roller
Drum roller
CH roller
Cleaning roller
Heat roller
Exit roller
Feed roller
Manual printing
Manual feed sensor
Paper sensor
Outlet sensor
Transfer roller
Hopping roller
TRAY printing
Roller control by pulse motor (main)
① Normal rotation of pulse motor (main): Drum roller, transfer roller, cleaning roller, CH roller, developing roller, heat roller, exit roller rotation
② Reverse rotation of pulse motor (main): Drum roller, transfer roller, cleaning roller, CH roller, developing roller, heat roller, exit roller, feed roller, hopping roller rotation
Hopping operation from the tray, however, is performed when the electromagnetic clutch is turned on.

Figure 2-4 Schematic Drawing of OKIPAGE8w Lite/8z Paper Feeding

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2.5 Electro-Photographic Process

(1) Electro-photographic process

The electro-photographic process is outlined below.

① Charging

The surface of the OPC drum is charged negatively and uniformly by applying the DC voltage to the CH roller.

② Exposure

Light emitted from the LED head irradiates the negatively charged surface of the OPC drum. The surface potential of the irradiated surface attenuates to form the electrostatic latent image corresponding to the image signal.

③ Development and residual toner recovery

The negatively charged toner is brought into contact with the OPC drum, adhering to the electrostatic latent image on the OPC drum by static electricity. This adhesion causes the electrostatic latent image to change to a visible image.

At the same time, the residual toner on the OPC drum is attracted to the developing roller by static electricity.

④ Transfer

When paper is placed over the image drum surface, the positive charge which is opposite in polarity to that of the toner, is applied to the reverse side by the transfer roller. The toner is attracted by the positive charge and is transferred onto the paper. This results in the transfer of the toner image formed on the image drum onto the paper.

⑤ Cleaning

The cleaning roller temporarily attracts the residual toner on the transferred OPC drum with static electricity, then returns the toner to the OPC drum.

⑥ Fusing

The transferred unfused toner image is fused to a sheet of paper by applying heat and pressure to the image.

Figure 2-5 is a flow for the electro-photographic process.

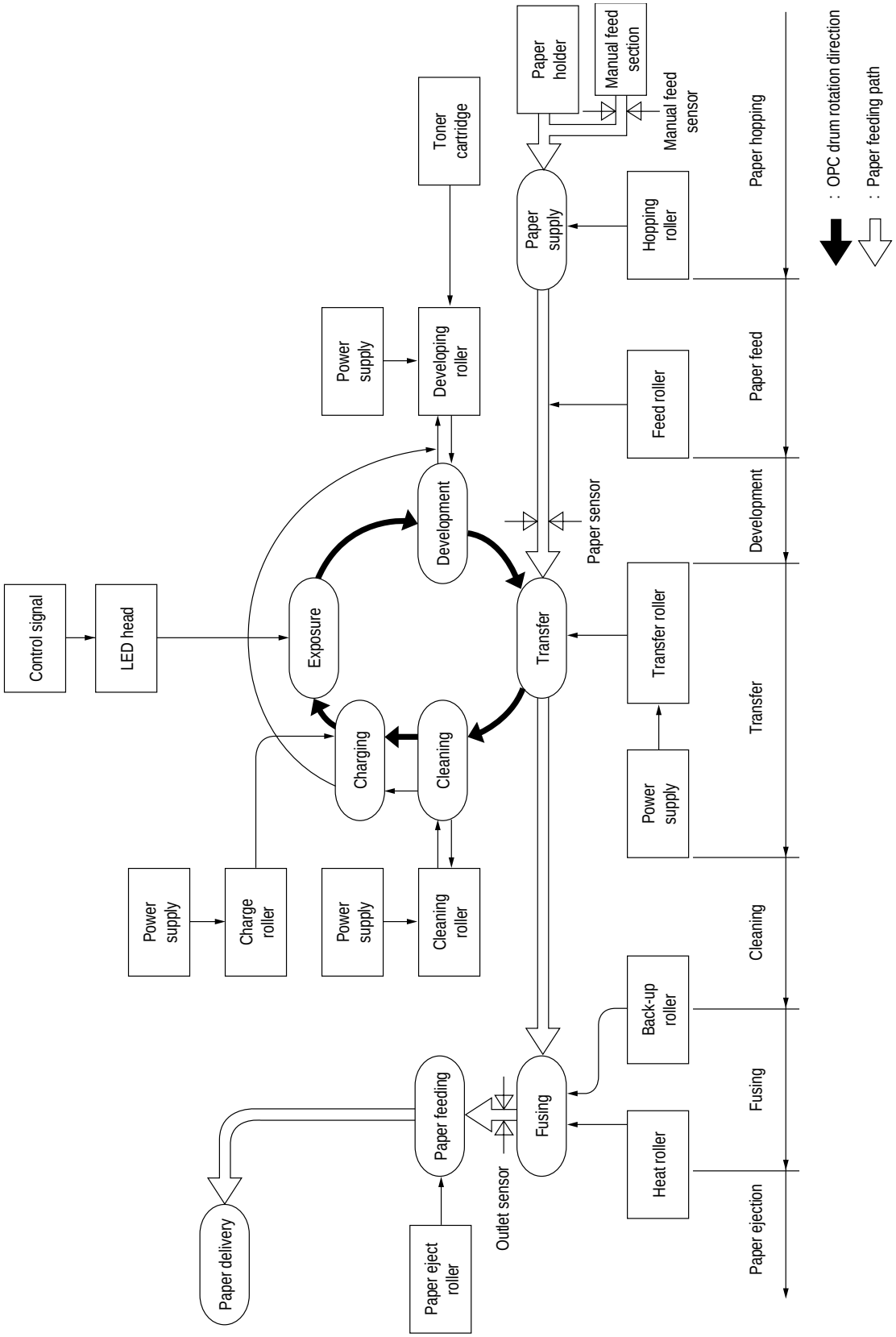


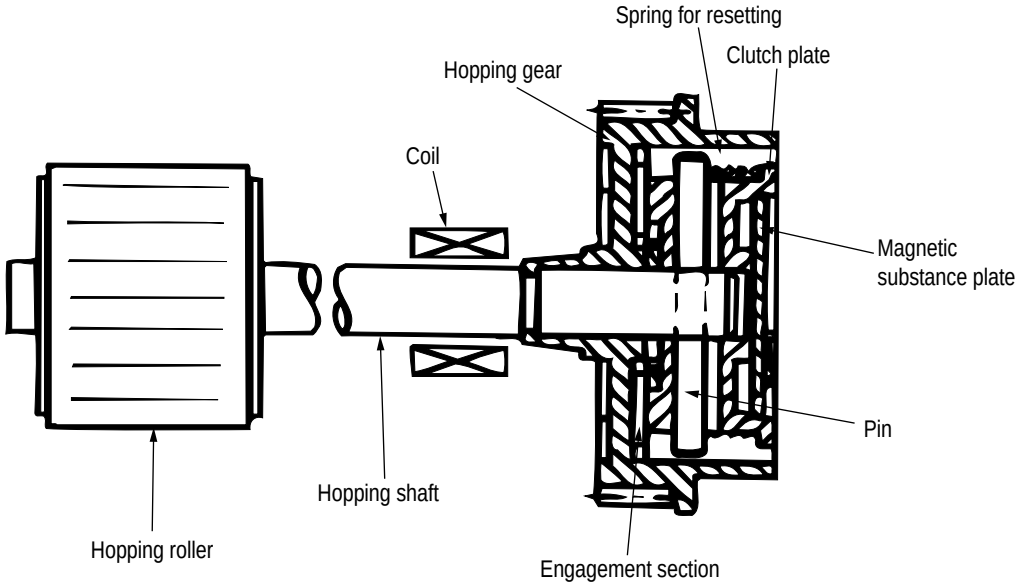
Figure 2-5 Flow for Electro-Photographic Process

2.5.1 Explanation of Each Process Operation

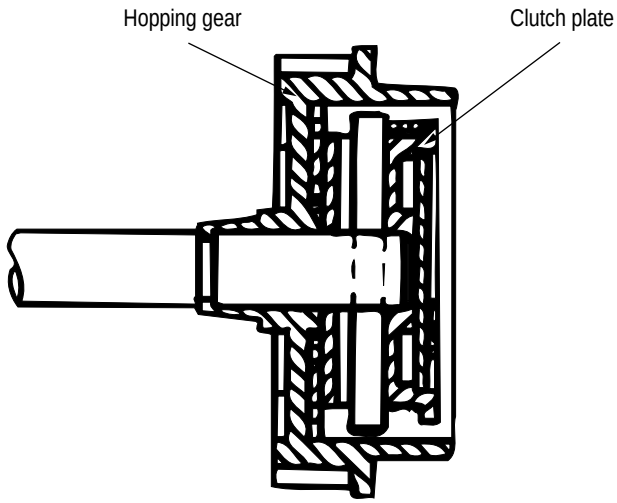
(1) Hopping

As shown in the figure below, the clutch for hopping is turned on/off according to current ON/OFF to a coil.

When the clutch is OFF



When the clutch is ON

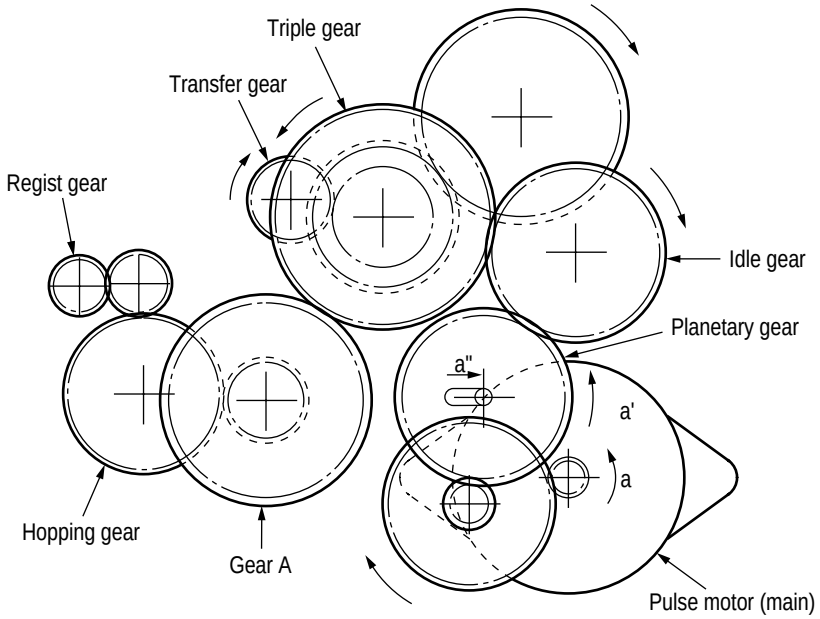


When the clutch is on, the hopping gear engages with the clutch plate to rotate the hopping roller.

When the clutch is off, the hopping gear is separated from the clutch plate by the spring for resetting, disabling the rotation of the hopping roller.

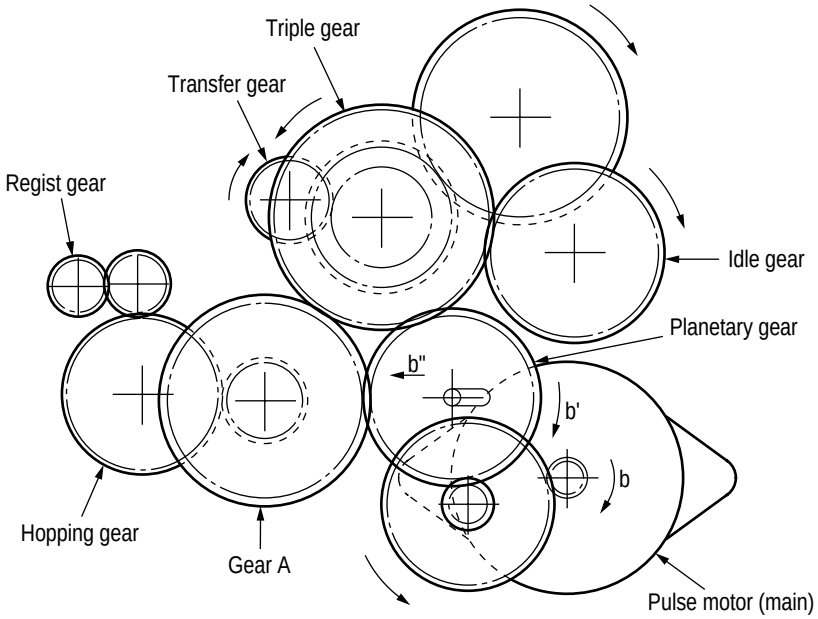
(2) Printing and warm-up

At warm-up



Rotate the pulse motor (main) in the a direction. The planetary gear rotates in the a' direction, dislocating its position in the a" direction. This causes the planetary gear to be separated from gear A. The hopping gear will not rotate. The triple gear and transfer gear rotate via the idle gear to drive the EP unit.

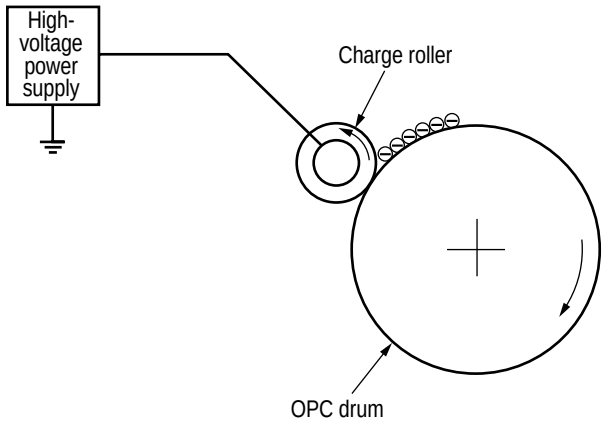
At printing



The paper is further advanced in synchronization to the print data.

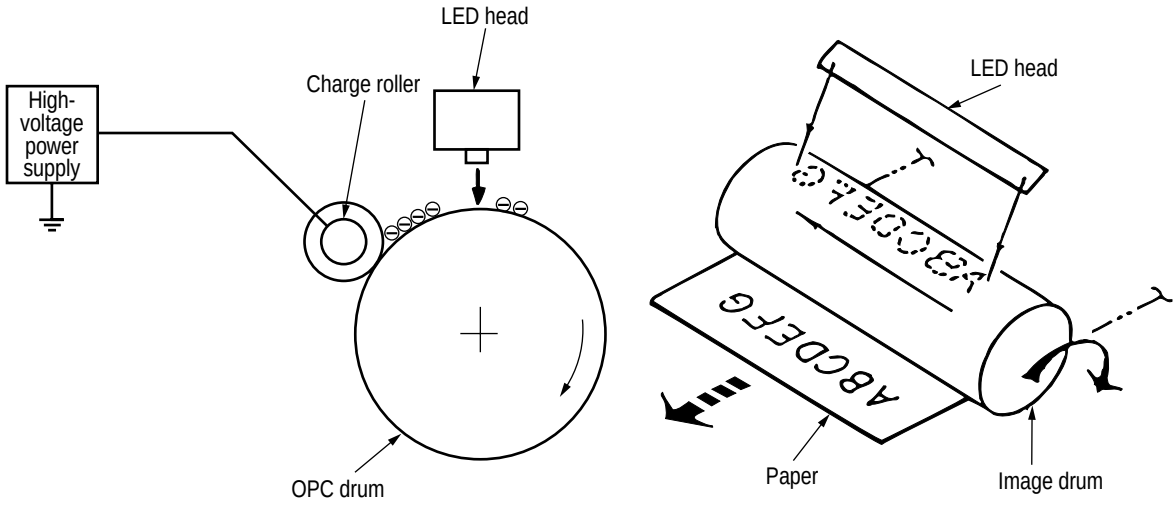
(3) Charging

Charging is performed by applying DC voltage to the charge roller that is in contact with the surface of the OPC drum.



(4) Exposure

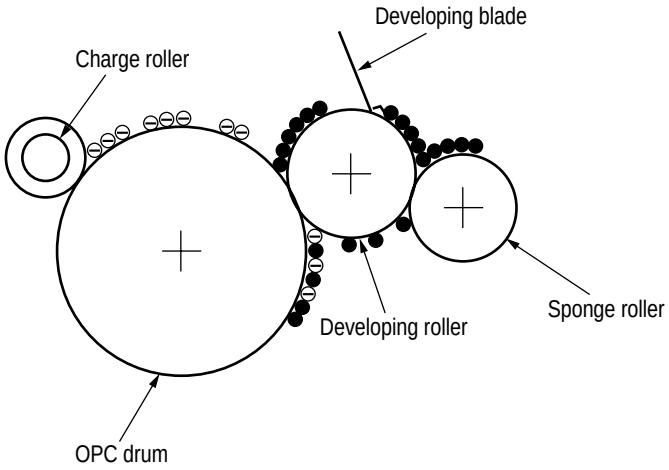
Light emitted from the LED head irradiates the negatively charged surface of the OPC drum. The surface potential of the irradiated surface attenuates to form the electrostatic latent image corresponding to the image signal.



(5) Development

The electrostatic latent image on the surface of the OPC drum is changed to a visible toner image by applying a toner to it. Development is performed in the contact part between the OPC drum and developing roller.

① The sponge roller negatively charges a toner and applies it to the developing roller.



② The toner applied to the developing roller is thin-coated by the developing blade.

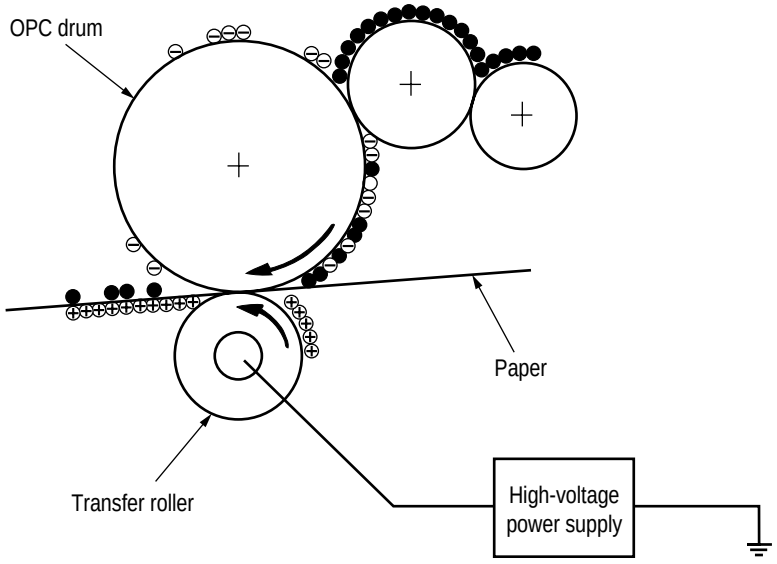
③ A toner adheres to the exposure part of the OPC drum in the contact part between the OPC drum and developing roller. This causes the electrostatic latent image to be changed to a visible image.

(6) Transfer

The transfer roller is composed of conductive sponge material. This roller is set so that the surface of the OPC drum and sheets of paper will adhere closely.

A sheet of paper is placed on the surface of the OPC drum and the positive charge opposite to the negative charge of a toner is applied from the reverse side by the transfer roller.

When a high negative voltage is applied from the power supply to the transfer roller, the positive charge induced on the surface of the transfer roller moves to the paper side at the contact part between the transfer roller and the sheet of paper. The positive charge on the lower side of the sheet of paper then causes the negatively charged toner adhering to the surface of the OPC drum to move to the upper side of the sheet. This enables transfer to the sheet of paper.

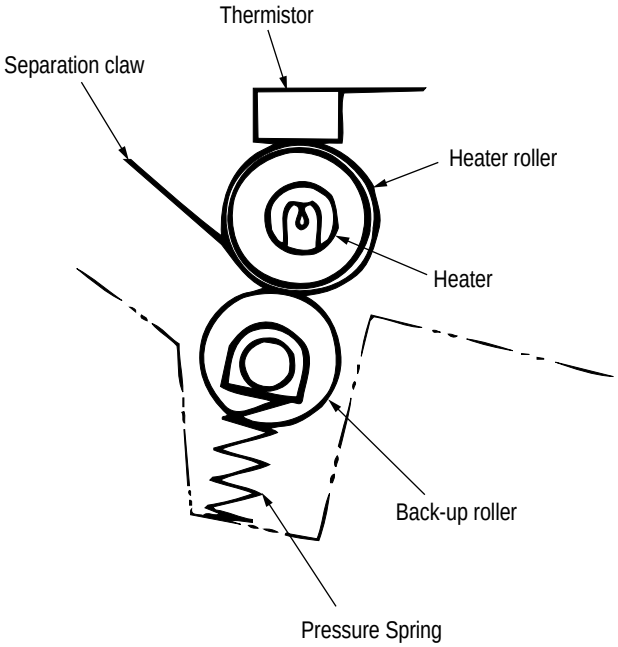


(7) Fusing

The transferred unfused toner image is fused to a sheet of paper because heat and pressure are applied when it passes between the heat roller and back-up roller.

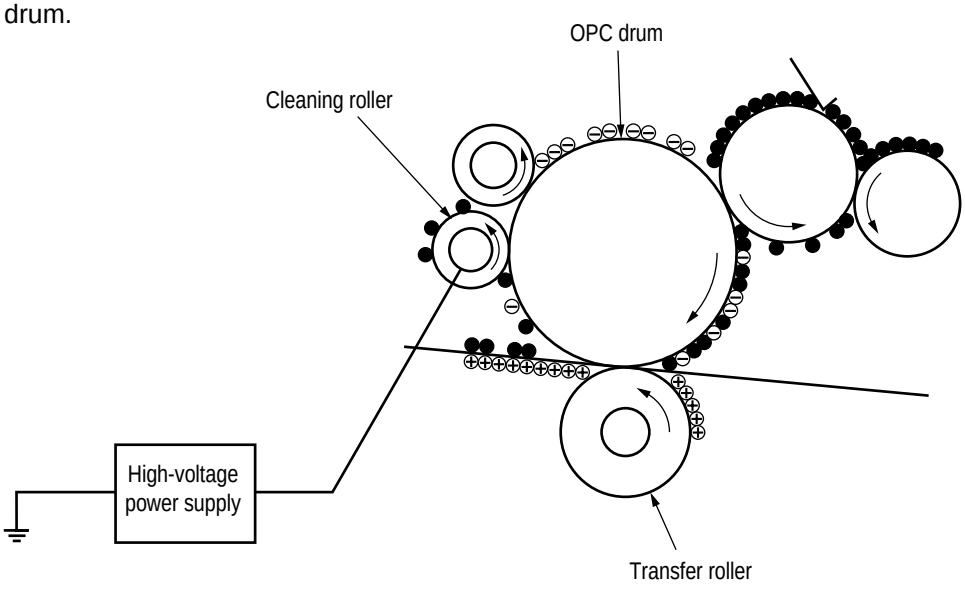
The Teflon-coated heat roller contains a 400 W heater (Halogen lamp) that heats the heat roller. The thermistor on the surface of the heat roller keeps the temperature of the heat roller constant. A thermostat is also installed for safety. If temperature rises abnormally, this thermostat opens to suspend voltage supply to the heater.

The back-up roller is pressurized to the heat roller by the pressure spring on each side.



(8) Cleaning

After transfer has terminated, the cleaning roller temporarily draws in the untransferred residual toner adhering to the OPC drum with static electricity and then returns it to the OPC drum.



2.6 Paper Jam Detection

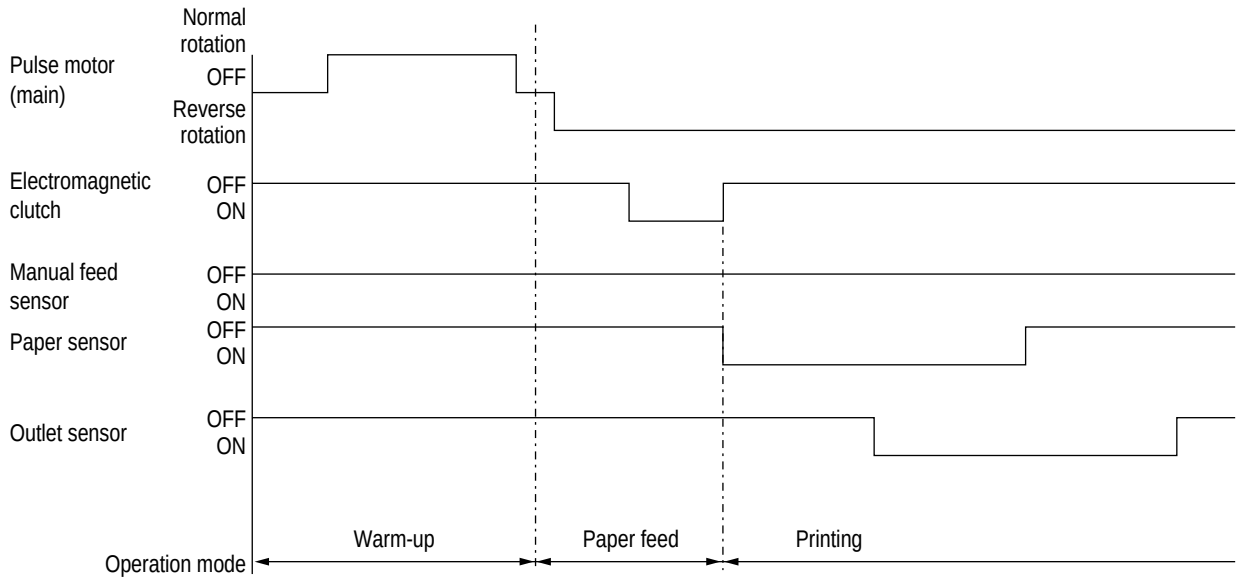
The OKIPAGE 8w Lite/8z monitors the paper status when the power supply is on and during printing. In the following cases, the OKIPAGE 8w Lite/8z interrupts the printing process as a paper jam. Printing can be recovered by opening the cover, removing the jammed paper, and closing the cover.

Error	Cause of Error
Paper inlet jam	• Only the manual feed sensor detects "Paper exists" when the power supply is on. • The leading part of the paper does not reach the paper sensor although hopping operation was performed three time.
Paper feed jam	• The leading part of the paper does not reach the outlet sensor within a fixed time after it has passed the paper sensor.
Paper outlet jam	• The trailing part of the paper does not pass the outlet sensor within L mm after the leading part of the paper has passed the outlet sensor. 2.52" (64 mm) ≦ L ≦ 15.77" (400.6 mm)
Paper size error	• The trailing part of the paper does not pass the paper sensor within L mm after the leading part of the paper has passed the paper sensor. 2.52" (64 mm) ≦ L ≦ 15.77" (400.6 mm)

Paper Feed Check List

Type of Error	Supervisory Sensor	Reference Value	Error	
			Pluse	Minus
Paper feed error	Electromagnetic clutch ON/ Paper sensor ON	69.8	35	—
Paper feed jam1	Paper sensor ON/ Outlet sensor ON	122.9	20.0	—
Paper size error	Paper sensor ON/ Paper sensor OFF	2.52" (64 mm) ≦ L ≦ 15.77" (400.56 mm)	—	—
Paper outlet jam	Outlet sensor ON/ Outlet sensor OFF	2.52" (64 mm) ≦ L ≦ 15.77" (400.56 mm)	45.0	45.0
Paper feed jam 2	Paper end sensor OFF/ Outlet sensor OFF	121.9	20.0	20.0

Unit: mm

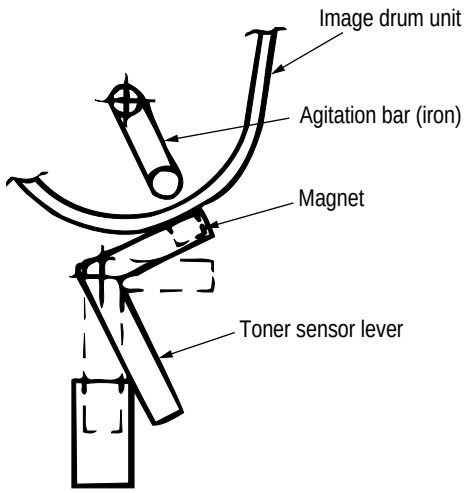


Timing Chart for Paper Feed (Tray Feed)

2.7 Toner Low Detection

- Hardware configuration of toner sensor

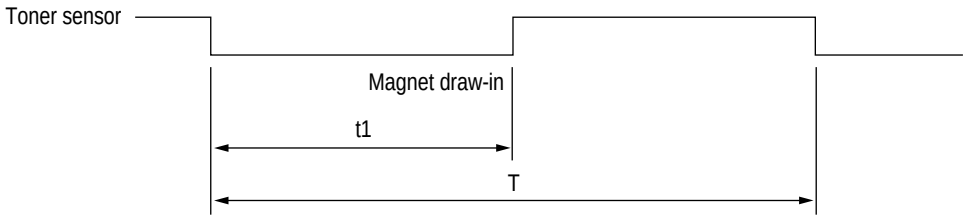
  The figure below shows the hardware configuration of the toner sensor.



Hardware Configuration of Toner Sensor

- Toner detection method

  (1) Toner sensor monitoring conditions are shown in the figure below.



Caution: The toner sensor is not monitored when the drum is inactive.

(a) When the toner-low state continues twice, Toner Low occurs. (This state is monitored at a cycle of 40 milliseconds.)

(b) When the toner-full state continues twice, Toner Low is released. (This state is monitored at a cycle of 40 milliseconds.)

(c) When the toner sensor does not change over two cycles (T × 2), the toner sensor alarm state occurs.

(d) After the EP unit has been replaced (after the drum counter has been reset), Toner Low is not detected when the drum counter indicates 1 to 100 counts.

(2) The basic rotation cycle of the toner sensor is as follows:

	T time
Basic rotation cycle of toner sensor	2.5 sec.
Toner low time	t1 > 0.64 sec.
Toner full time	0.64 sec. > t1 > 0.28 sec.

2.8 Cover Open

Opening the stacker cover turns off the microswitch on the high-voltage power supply board to suspend +5V supply to the high voltage power supply. This results in the stop of all high-voltage outputs. At the same time, the CVOPN signal is issued to notify the main control board of the switch status and cover open processing is executed.

2.9 Detecting I/D Unit existence

In this model, a micro switch may be activated, applying a high voltage to the machine under a state where the cover is slightly opened. In this case, there is a fear that, when a user insert his hand through the opening, he may be shocked unless an I/D Unit has been installed. (Safety standard measures EN60950 : 1992)
Therefore, with mechanism, an interlock system for micro switch shall be added if a machine has no mechanism with I/D Unit inside. Also, for control, I/D Unit existence detection shall be implemented according to the following method.

<Conditions for judging I/D Unit existence>

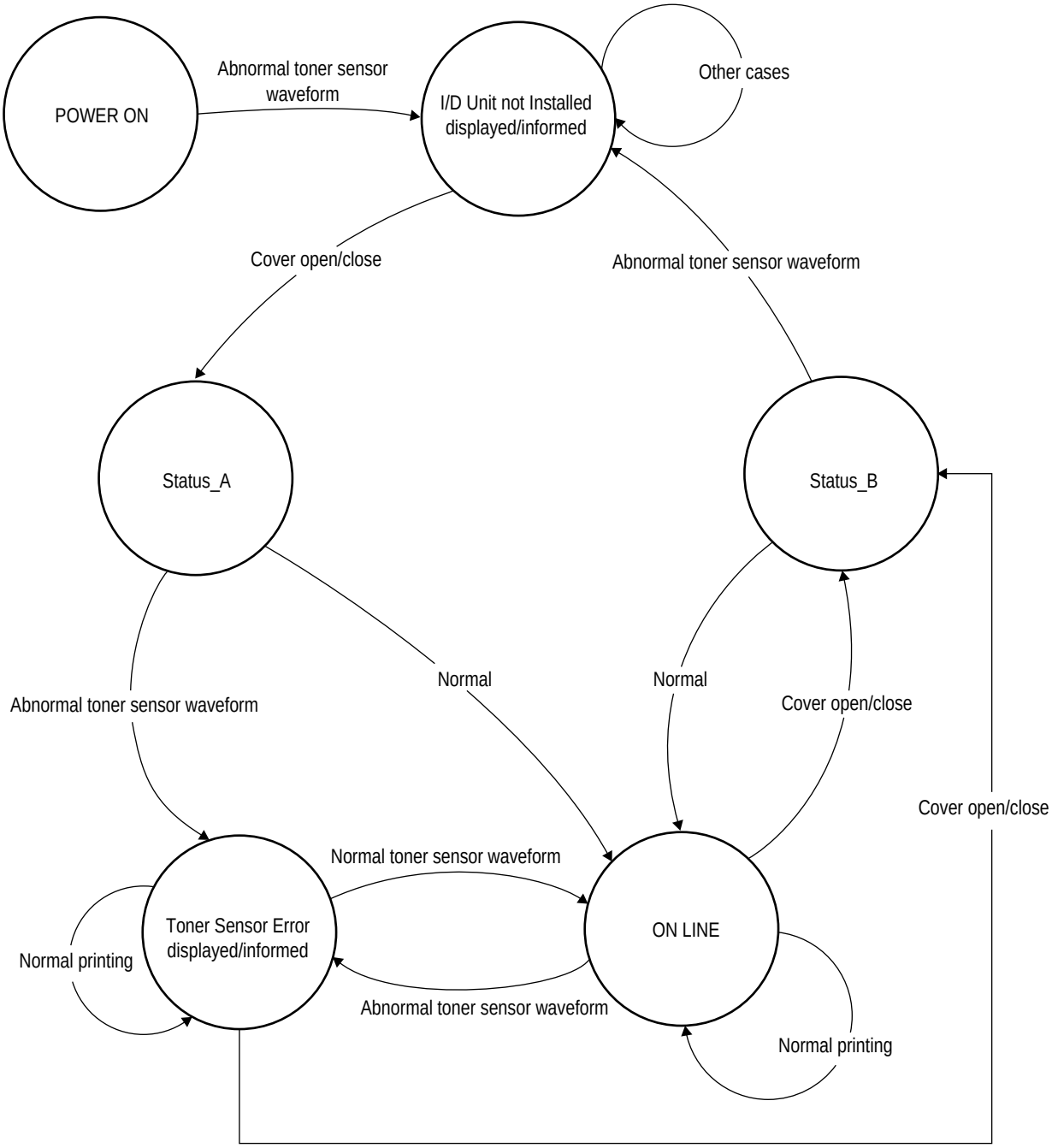
If a toner sensor does not change for 1.2 cycle of toner sensor basic rotation cycle soon after powering on or closing cover, no installed I/D Unit shall be judged, stopping Warming Up motion to shift the machine mode to light malfunction. But this error can be recovered by cover open and close operation after installing I/D Unit.

	T time	Remarks
I/D Unit existence detection time	3.04 sec.	As the toner sensor monitors at intervals of 40 msec. the fractional part should be rounded down.

The conditions for enabling this error should be as follows.

Valid condition	In the case of 31 pages or more in total drum counter
Invalid condition	In the case of 30 pages or less in total drum counter, a significant malfunction toner sensor error shall occur.

But when the toner sensor breaks down with 31 or more counted in total at the drum, I/D Unit not Install will be displayed without fail at power on. Even in this case, the machine should be in printable state so that printing can be guaranteed until the completion of toner repair. (See the drawing in the next page)



OKIPAGE 8w Lite/8z I/D Unit not Installed / Toner Sensor Error

Draft for specification
1. Toner sensor error/I/D Unit not Installed state should not be stored in the EEPROM.
2. A shift to I/D Unit not Installed and Toner Sensor Error shall be made at cover open or close.

OKIPAGE 8w Lite/8z printing speed

(unit:PPM)

Feeding Tray		Tray						Manual					
Media Type		Light	Medium-Light	Medium	Medium-Heavy	Heavy	OHP	Light	Medium-Light	Medium	Medium-Heavy	Heavy	OHP
Paper size	Excutive	8	8	8	8	8	Note1	8	8	8	8	8	8
	Letter	8	8	8	8	8		8	8	8	8	8	8
	Legal 14	8	8	8	8	8		8	8	8	8	8	8
	Legal 13	8	8	8	8	8		8	8	8	8	8	8
	A4	8	8	8	8	8		8	8	8	8	8	8
	JIS B5	8	8	8	8	8		8	8	8	8	8	8
	A5	8	8	8	8	8		8	8	8	8	6	8
	A6	8	8	8	8	8		8	8	8	8	6	8
	Monarch	An envelop will be forcefully set to 6 PPM for manual feeding, narrow in width, thick paper regardless of feeding tray and media type.						An envelop will be forcefully set to 6 PPM for manual feeding, narrow in width, thick paper regardless of feeding tray and media type.					
	COM-10												
	DL												
	C5												
	COM-9												
	Domestic postcard and envelop equivalent	Domestic postcard and envelop equivalent will be forcefully set to manual. (An inquiry to own country is required)						8	8	8	8	6	8

Note) Tray + OHP. In the driver, OHP setting shall not be able to be selected on GUI for media type in tray. In the case of sending data, it shall be printed in OHP mode.

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3. PARTS REPLACEMENT

This chapter explains how to replace parts, assemblies, and units in the field.

The replacement procedures to be explained here include dismounting, not mounting. When mounting parts, assemblies, and units, reverse the dismounting steps.

3.1 Precautions for Parts Replacement

(1) Be sure to dismount the AC cord and interface cable before replacing parts.

(a) Be sure to dismount the AC cord in the following procedures:

i) Turn off the POWER switch of the printer ("○").
ii) Disconnect the AC inlet plug of the AC cord from the AC receptacle.
iii) Disconnect the AC cord and interface cable from the printer.

⚠Warning	Risk of Electric Shock	

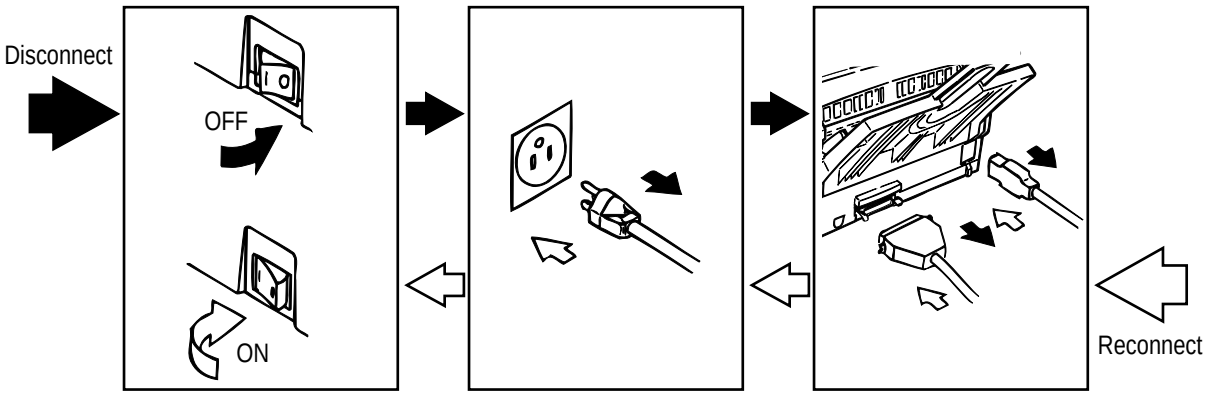
There is a risk of electric shock during replacement of the low voltage power supply.

Use insulating gloves or avoid direct contact with any conducting part of the power supply, and caution should be exercised during replacement.

The capacitor may take one minute to complete discharge after the AC cord is unplugged. Also, there is a possibility that the capacitor doesn't discharge because of a breakage of the PCB, etc., so remember the possibility of electric shock to avoid electric shock.

(b) Be sure to reconnect the printer in the following procedures:

i) Connect the AC cord and interface cable to the printer.
ii) Connect the AC inlet plug to the AC receptacle.
iii) Turn on the POWER switch of the printer ("|").



(2) Do not disassemble parts as long as the printer is operating normally.

(3) Minimize disassembling. (Only the parts indicated in the parts replacement procedures can be dismounted.)

(4) Use only the specified maintenance tools.

(5) Disassemble parts in the specified sequence; otherwise, parts may be damaged.

(6) Temporarily tighten small parts such as screws and collars to the original locations because they tend to be lost easily.

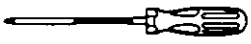
(7) When handling ICs such as CPUs, ROM, and RAM and PC boards, do not wear gloves that easily cause static electricity.

(8) Do not place PC boards directly on devices and floors.

[Maintenance Tools]

Table 3-1 lists the maintenance tools necessary for parts replacement.

Table 3-1 Maintenance Tools

No.	Maintenance Tools		Q'ty	Use	Remarks
1		No. 1-100 Philips screwdriver	1	2~2.5 mm screw	
2		No. 2-100 Philips screwdriver	1	3~5 mm screw	
3		No. 3-100 Philips screwdriver	1		
4		No. 5-200 screwdriver	1		
5		Digital multimeter (tester)	1		
6		Pliers	1		
7		Handy cleaner	1		Reter to the following note.

Note! Use a vacuum cleaner dealing with toner. Using a common vacuum cleaner may cause fire.

[Maintenance Utility]

Table 3-2 Maintenance Utility

No.	Maintenance Utility		Q'ty	Use	Remarks
1		Maintenance utility	1		

3.2 Parts Layout

This section explains the layout of main parts.

[Upper Cover Assy]

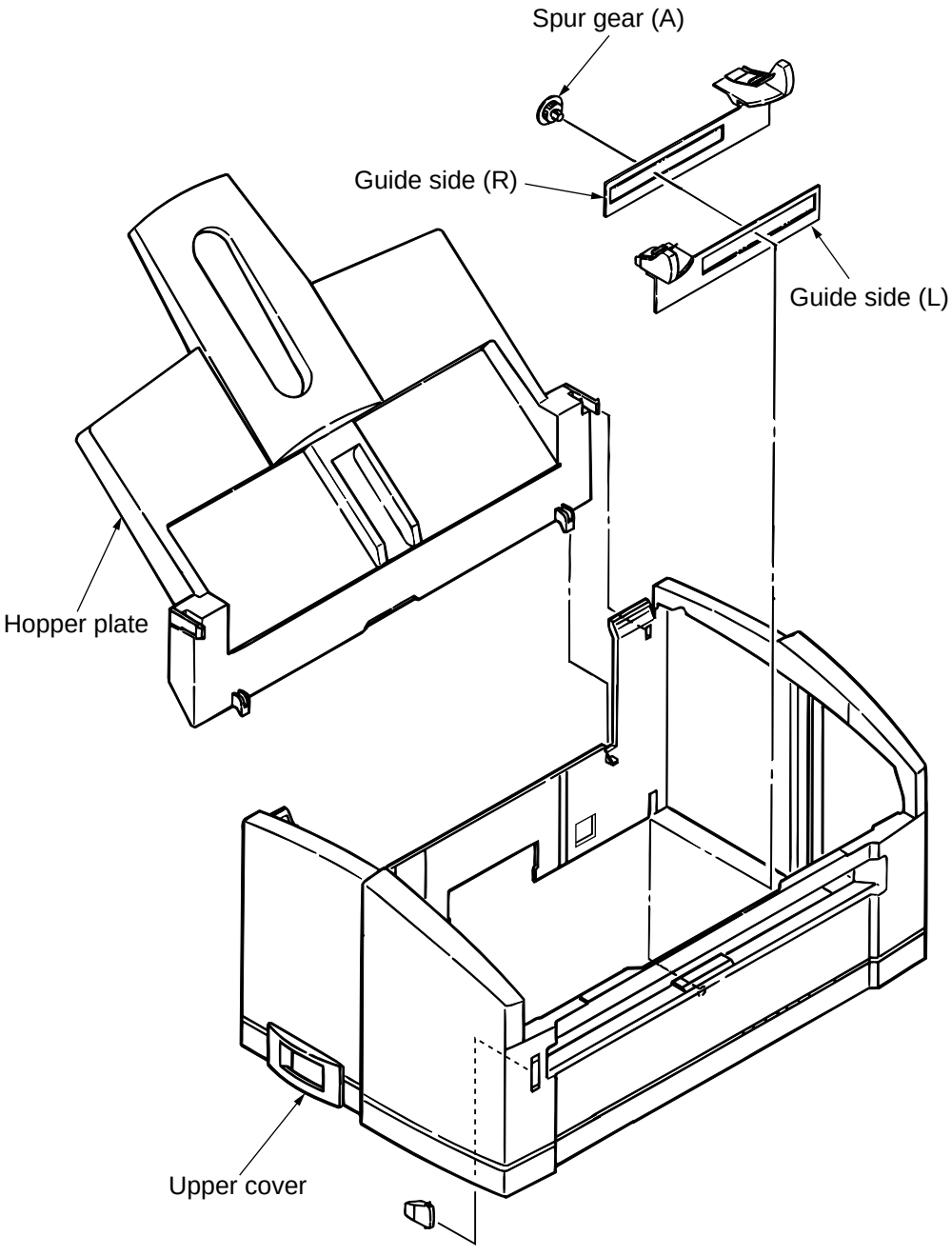


Figure 3-1

[Base Frame Unit]

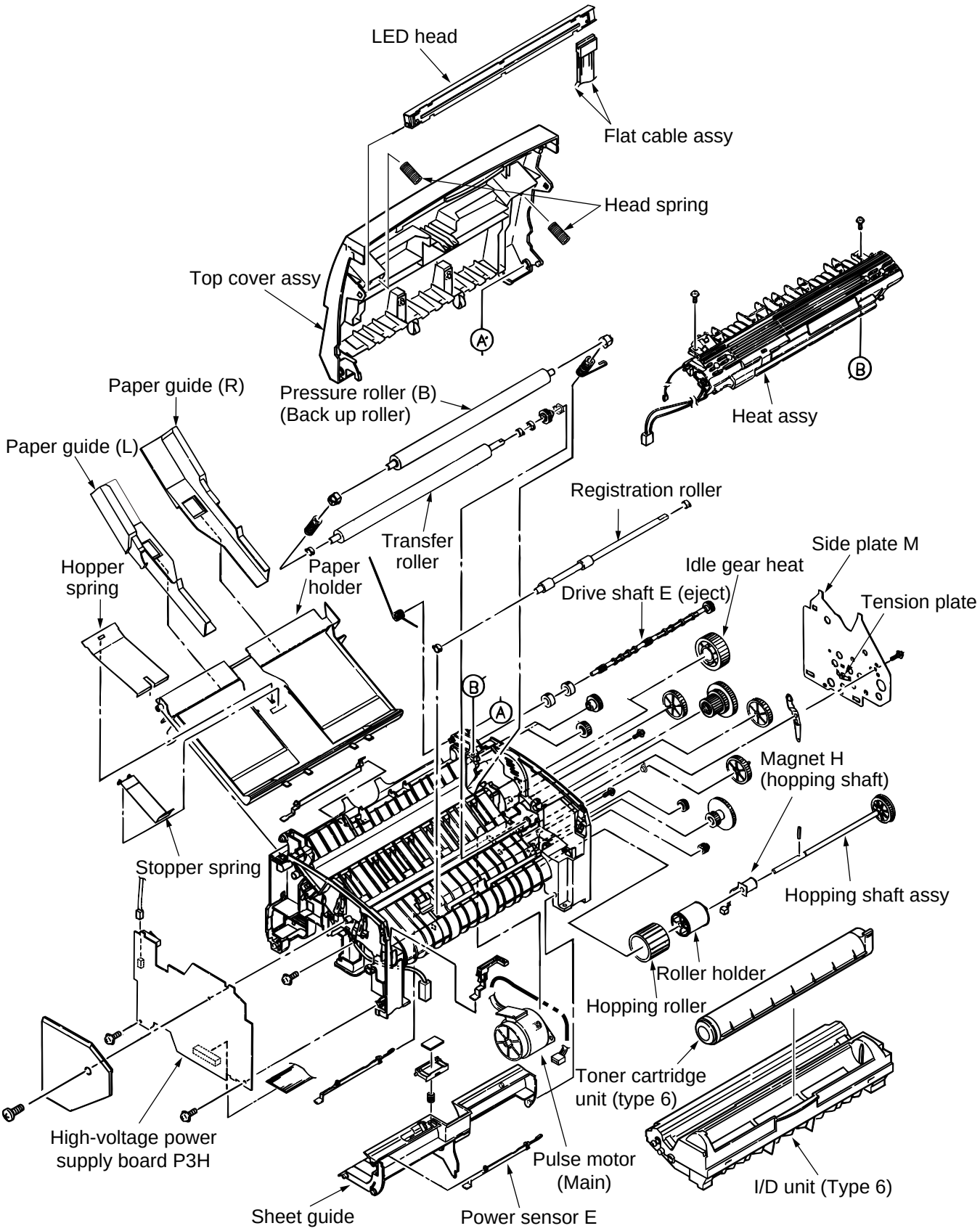


Figure 3-2

[Base Plate Unit]

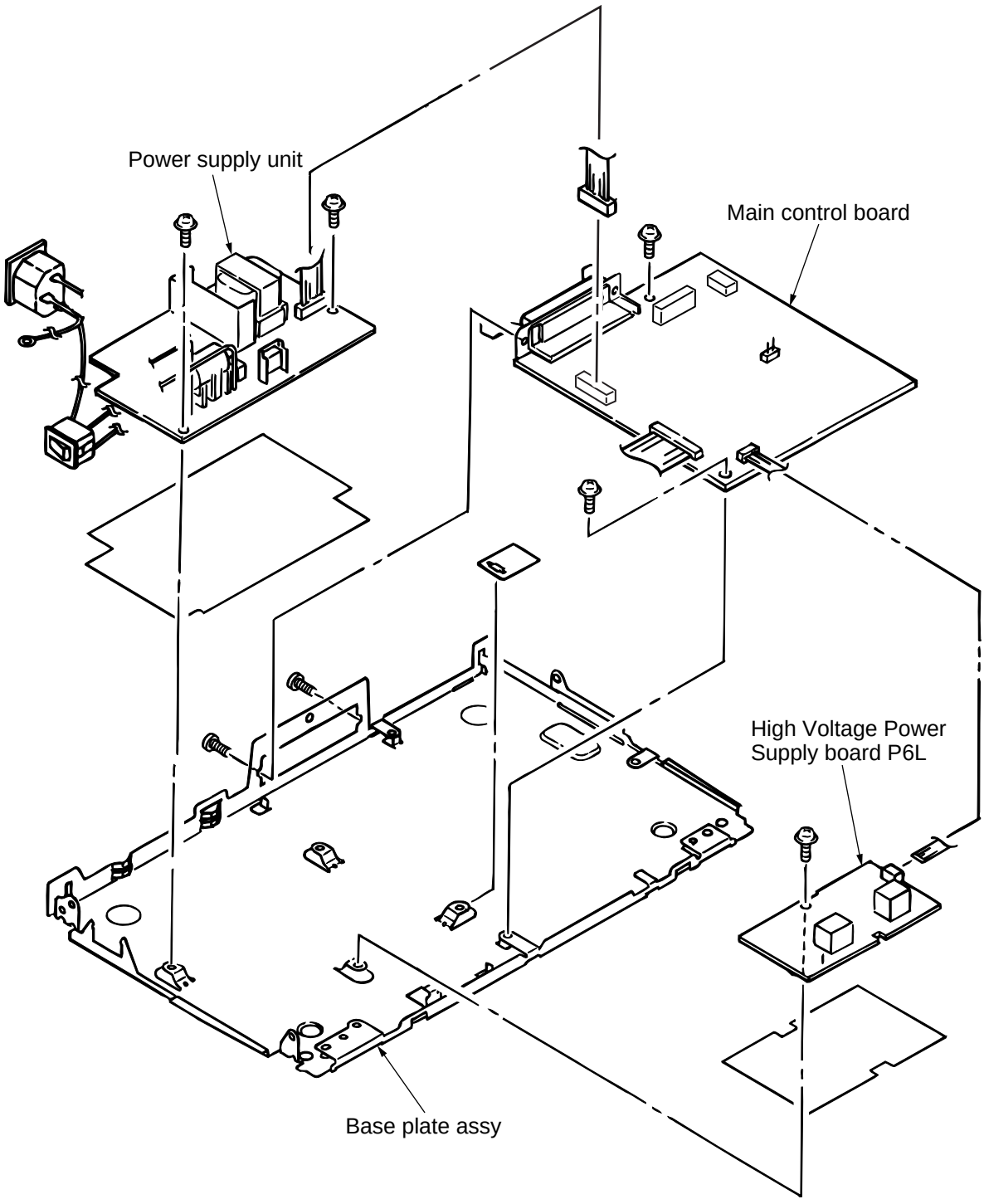


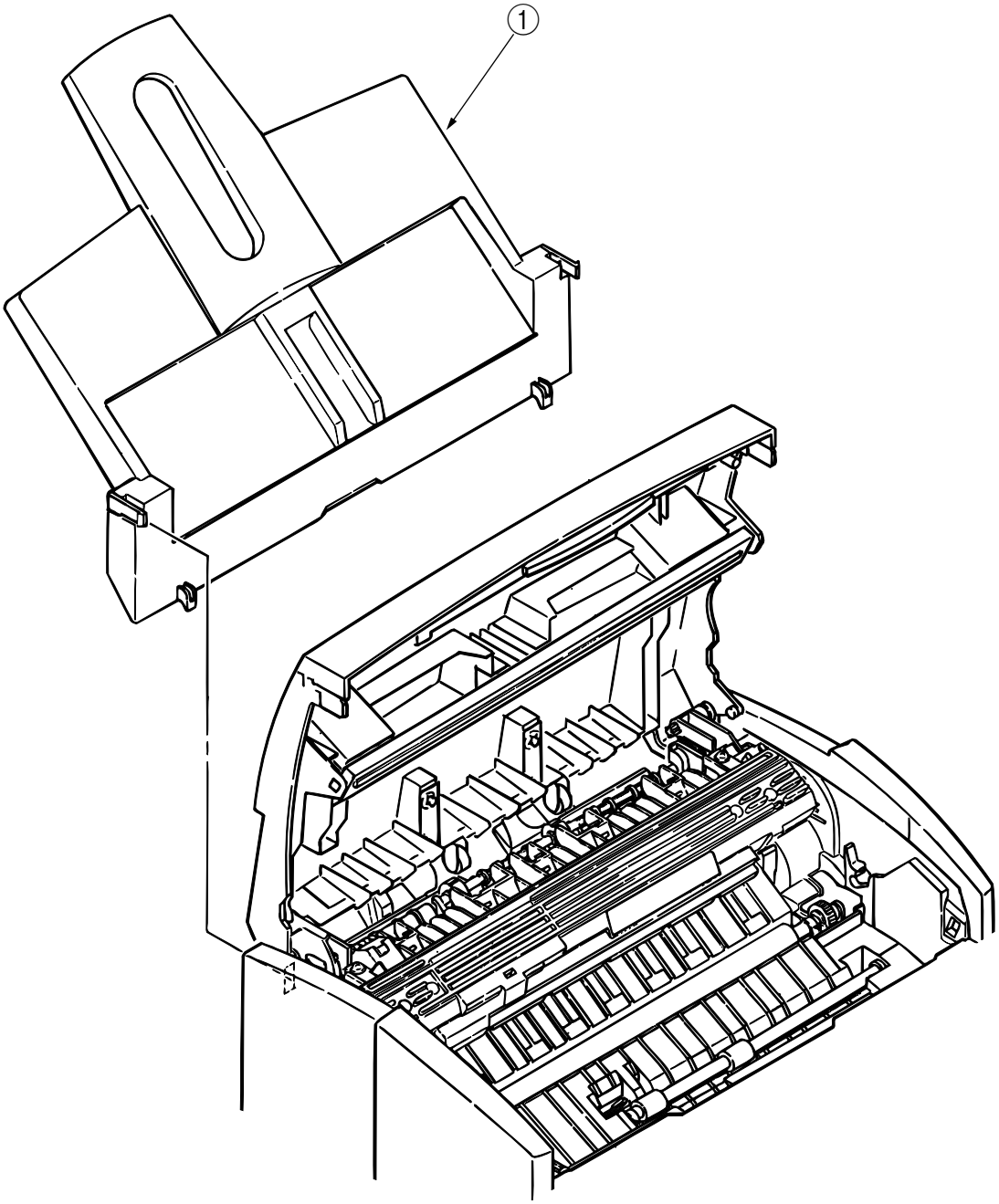
Figure 3-3

3.3 Replacing Parts

This section explains how to replace parts and assemblies.

3.3.1 Hopper Plate

(1) Remove two claws and dismount hopper plate ①.

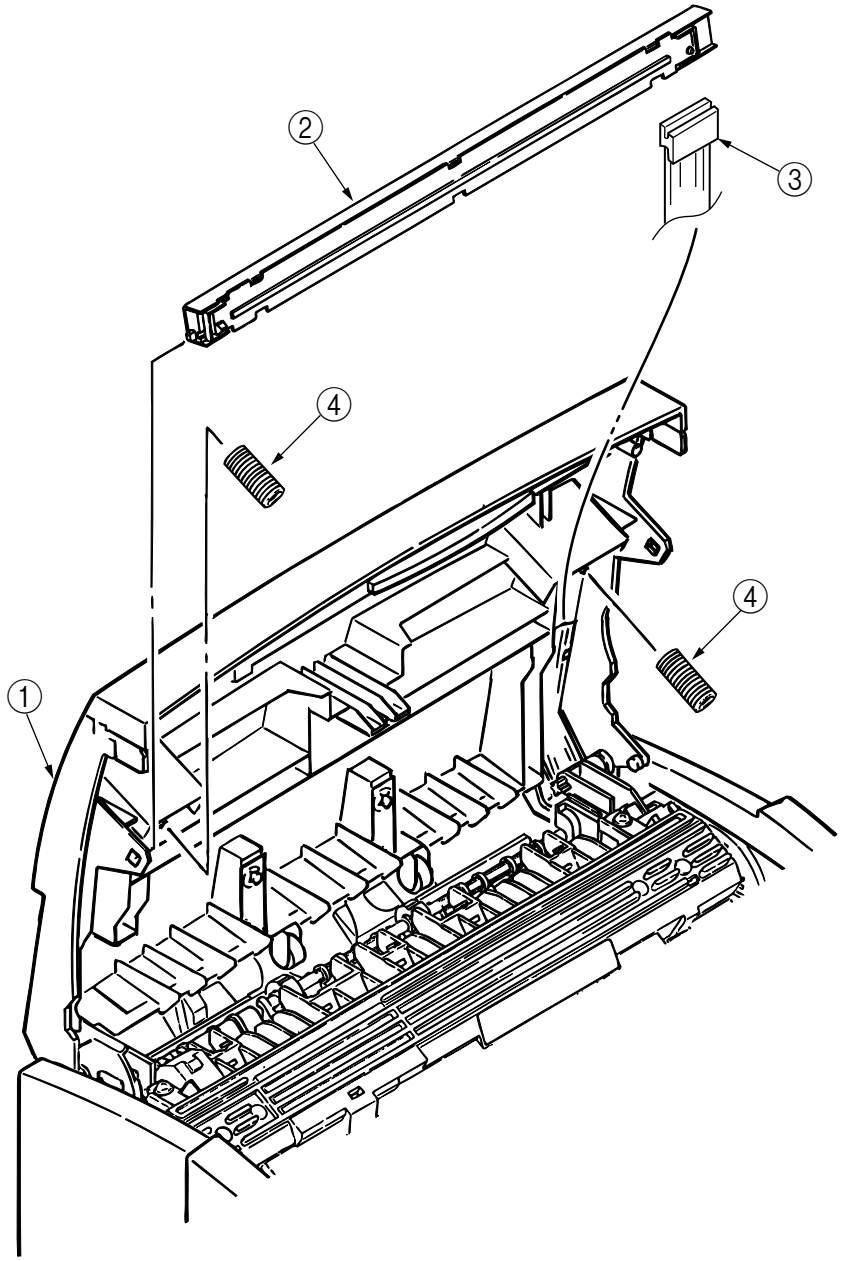


3.3.2 LED Head and Head Spring

(1) Open top cover assy ①.

(2) Dismount the left clamp and LED head ②. Then, dismount flat cable assy ③.

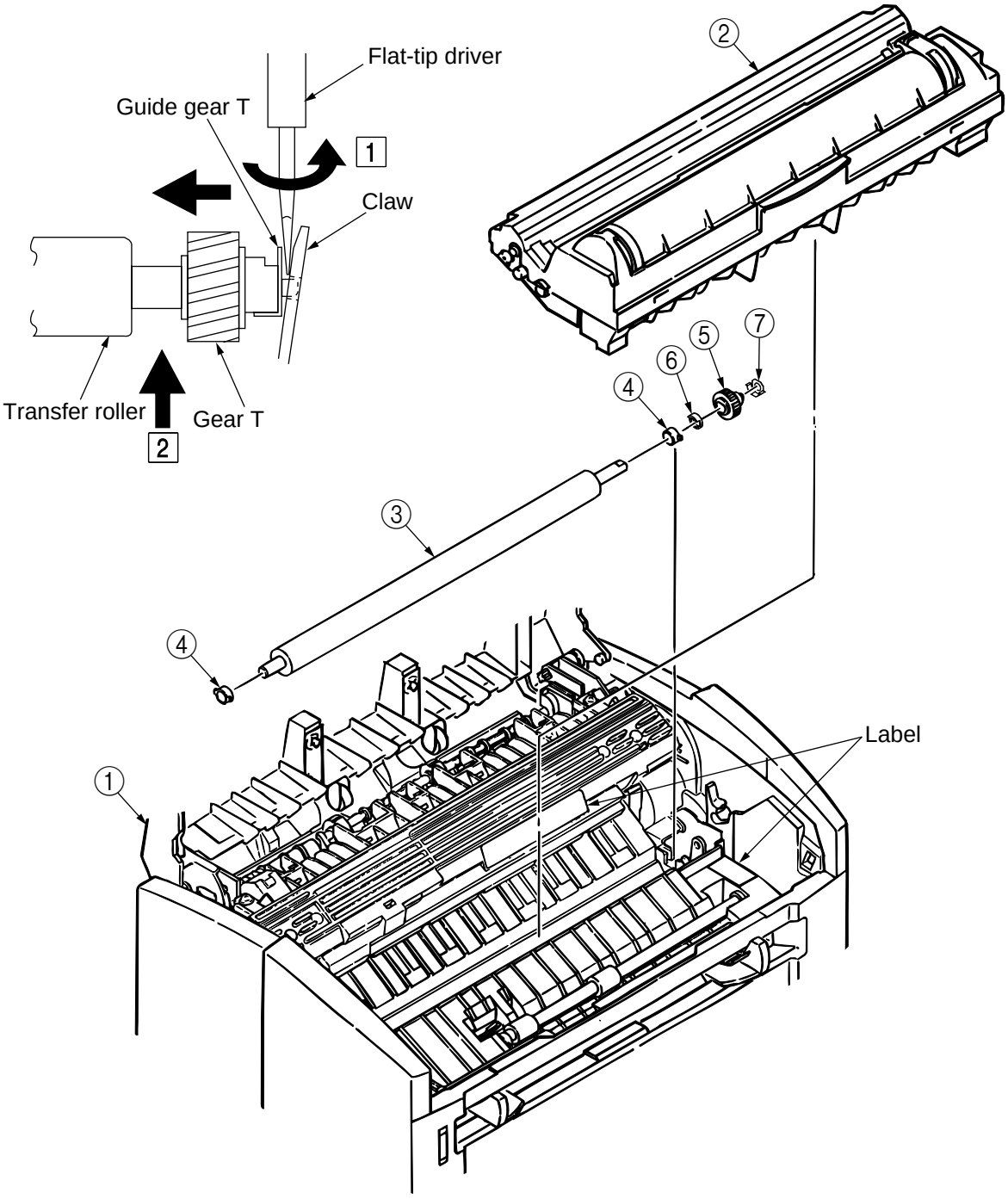
(3) Dismount two head springs ④.



3.3.3 Transfer Roller

(1) Open top cover assy ① and dismount I/D unit (Type 6) ②.

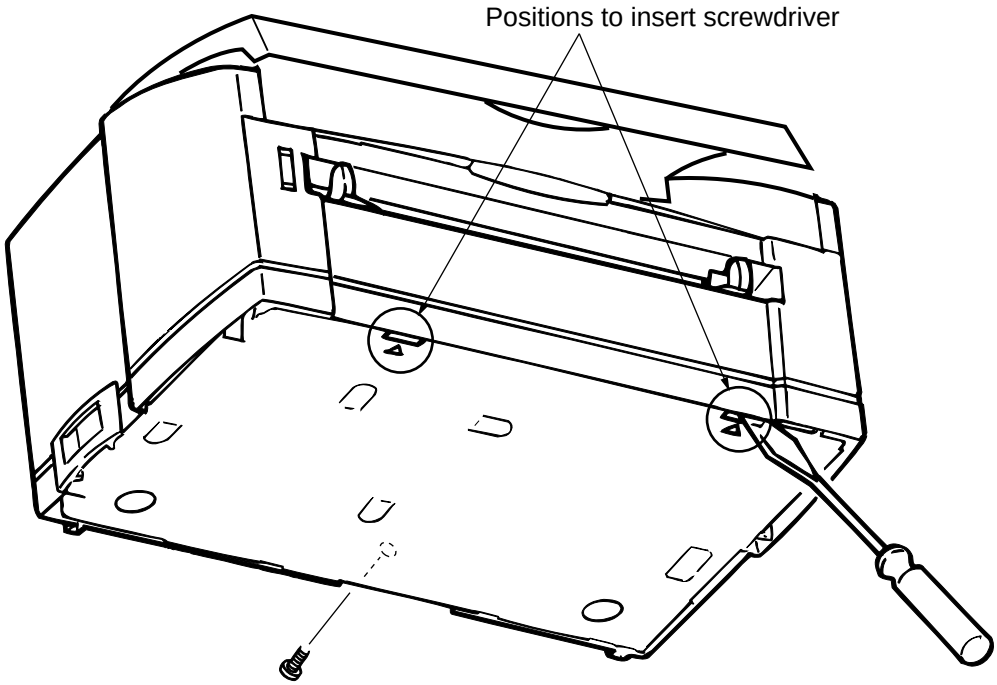
(2) Remove the washer TR ⑥ (make sure to do it)
1: Insert a flat-tip driver between the claw and the guide gear T ⑦ in a way of pushing gear T ⑤ so that it hits the left side and rotate the driver.
2: Pull off the post of the gear T ⑤ from the hole of the claw by lifting the shaft of transfer roller ③ with another driver while maintaining the avobe state in 1.



3.3.4 How to remove Cover Upper Assy

(1) Unscrew screws on the rear part.

(2) Open Cover Top Assy. Inserting a screwdriver head into a slot marked with △ on the Plate Base edge, turn the screwdriver and lift Cover Upper Assy upward. Repeat the same procedure for another slot on the edge.



3.3.5 Upper Cover Assy

(1) Turn off the power switch and unplug the AC cord from the AC socket.

(2) Disconnect interface cable ①.

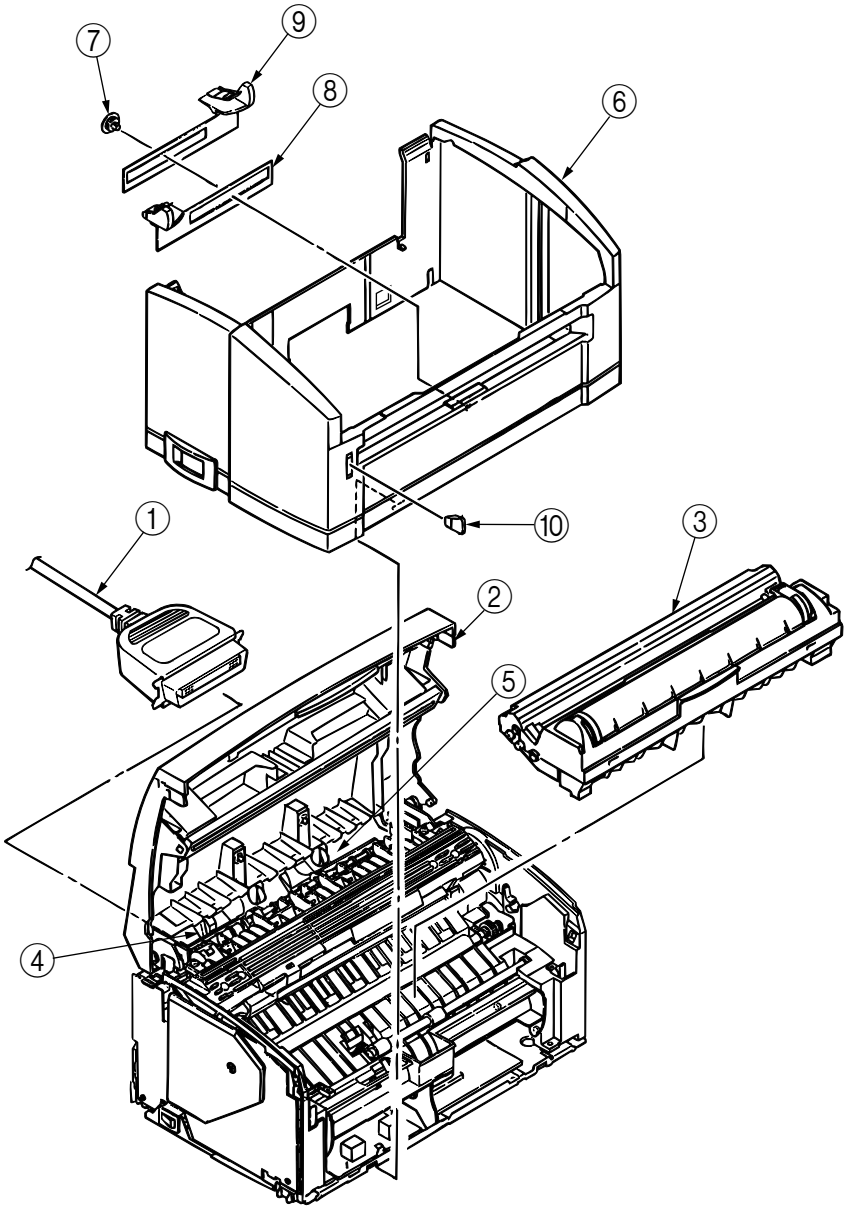
(3) Open top cover assy ② and dismount I/D unit (Type 6) ③.

(4) Move paper guide (L) ④ and paper guide (R) ⑤ on the rear of the printer to the center.

(5) Remove two front claws of upper cover assy ⑥ and lift upper cover assy ⑥.

(6) Dismount spur gear (A) ⑦, guide slide (L) ⑧, and guide slide (R) ⑨.

(7) Dismount lens ⑩.



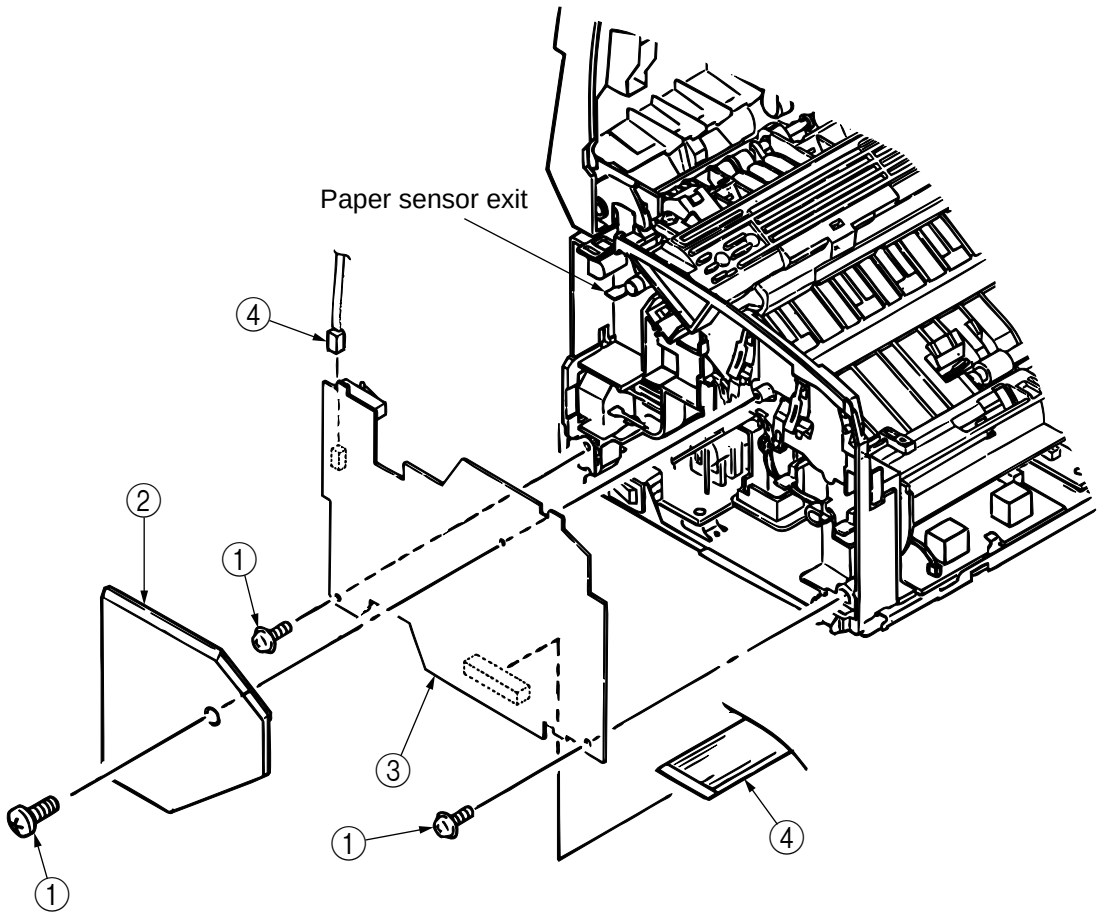
3.3.6 High-Voltage Power Supply Board (P3H)

(1) Dismount upper cover assy. (See Section 3.3.5.)

(2) Remove three screws ① and remove the cover ② and draw out high-voltage power supply board(P3H) ③.

(3) Disconnect all the cables ④ from high-voltage power supply board(P3H) ③ and dismount high-voltage power supply board(P3H) ③.

Caution: Note the following when assembling the high-voltage power supply board(P3H):
- Mount the high-voltage power supply board(P3H) with top cover assy removed or open.
- Take care that cable ④ will not interfere with the paper sensor exit when it is connected.
- Replacement parts of High-Voltage Power Supply Board (P6L) is see 3.3 18)



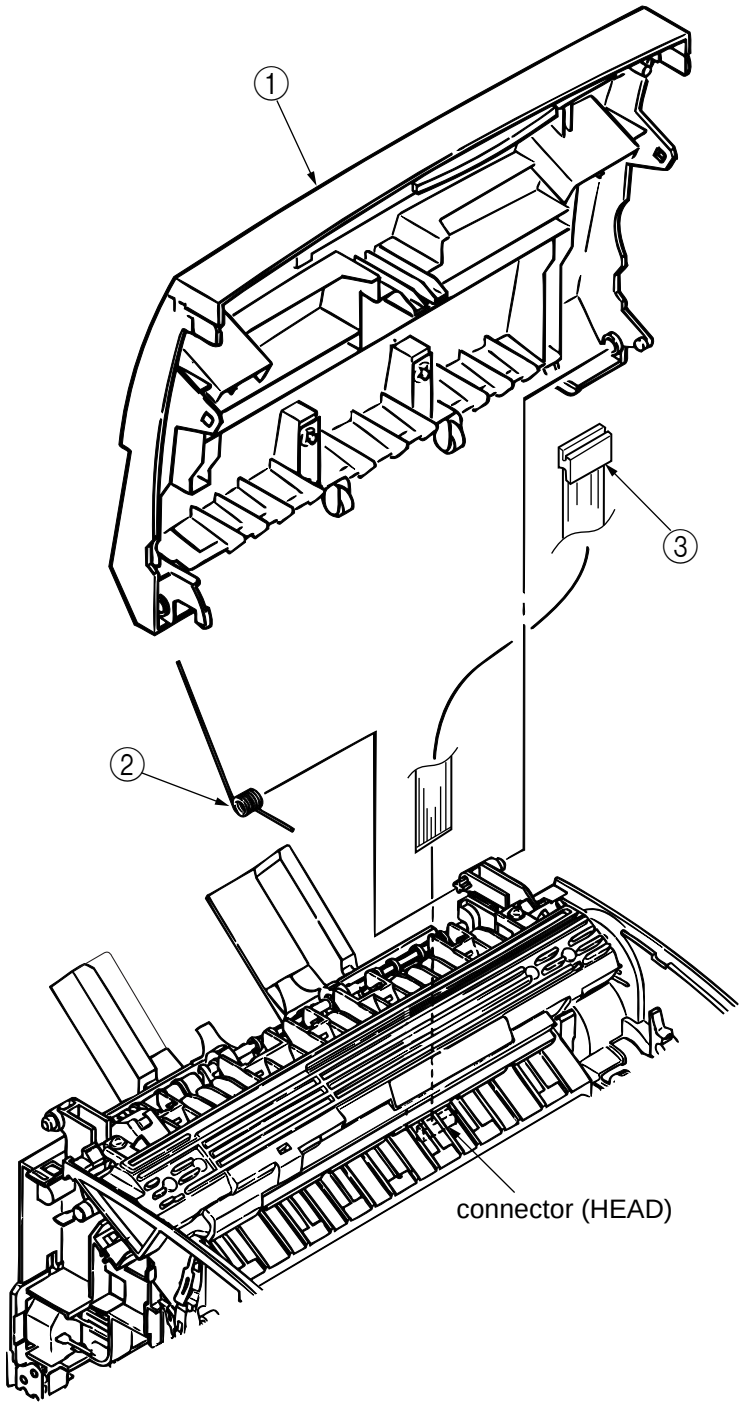
3.3.7 Top Cover Assy and Flat Cable Assy

(1) Dismount the upper cover assy. (See Section 3.3.5.)

(2) Dismount the LED head. (See Section 3.3.2.)

(3) Press the right clamp outward and dismount the engagement and top cover assy ①. (Tension spring ② also comes off at the same time.)

(4) Disconnect connector HEAD on the control board and dismount flat cable assy ③.



Note: When reassembling these parts, make sure that the flat cable assy is firmly fitted with both the LED Head and connector HEAD. An improper fit may damage the control board and LED head.

3.3.8 Paper Holder

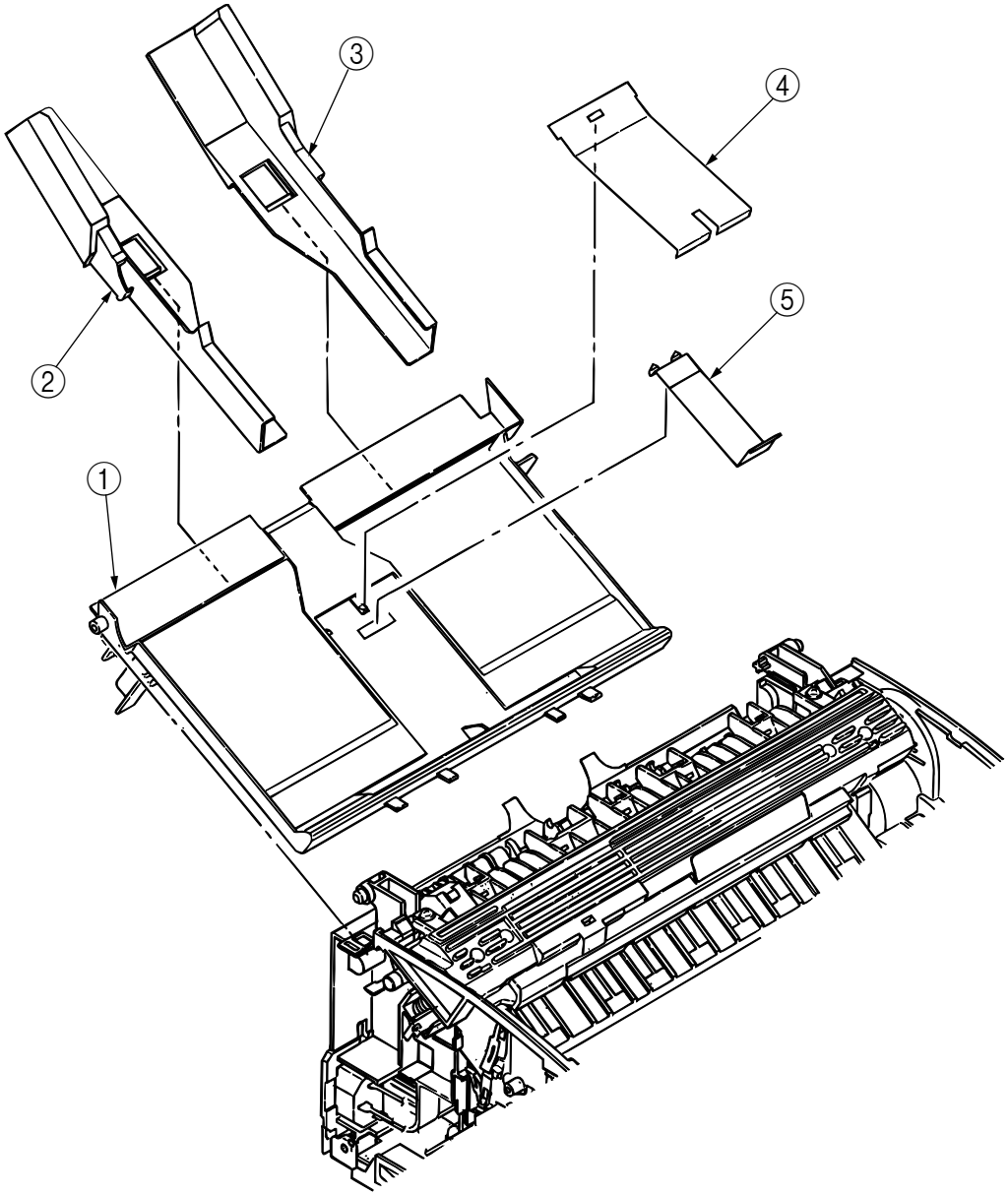
(1) Dismount the upper cover assy. (See Section 3.3.5.)

(2) Dismount paper holder ①.

(3) Unlock and dismount paper guide (L) ② and paper guide (R) ③.

(4) Remove the claw and dismount hopper spring ④.

(5) Remove the claw and dismount stopper spring ⑤.



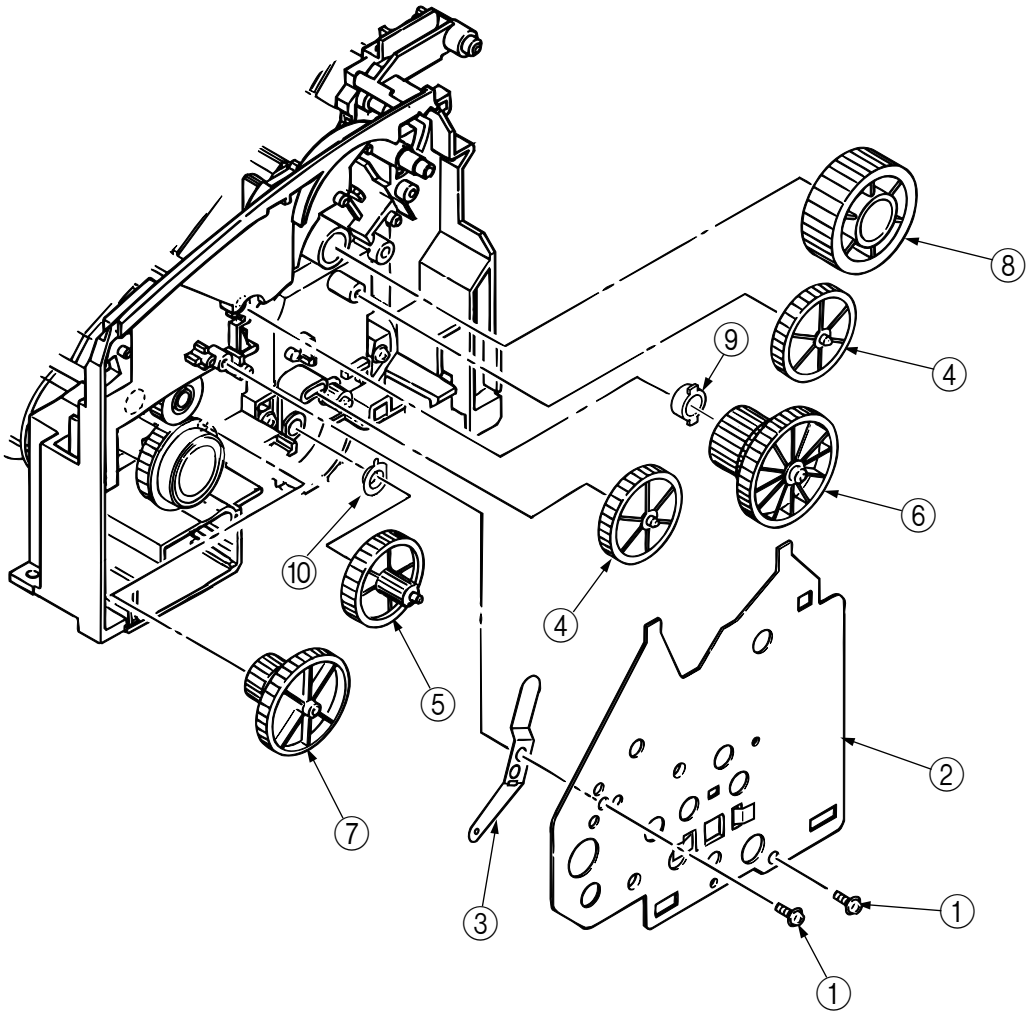
3.3.9 Side Plate M and Idle Gear

Perform parts replacement while making the base frame assy stand so that side plate M will face upward.

(1) Dismount the upper cover assy. (See Section 3.3.5.)

(2) Remove two screws ① and two claws, then dismount plate side M②.

(3) Dismount earth plate ③, two idle gears P ④, idle gear M⑤, idle gear 3R⑥, idle gear 2R⑦, idle gear heat ⑧, regist bearing ⑨ and bearing gear ⑩.



3.3.10 Heat Assy

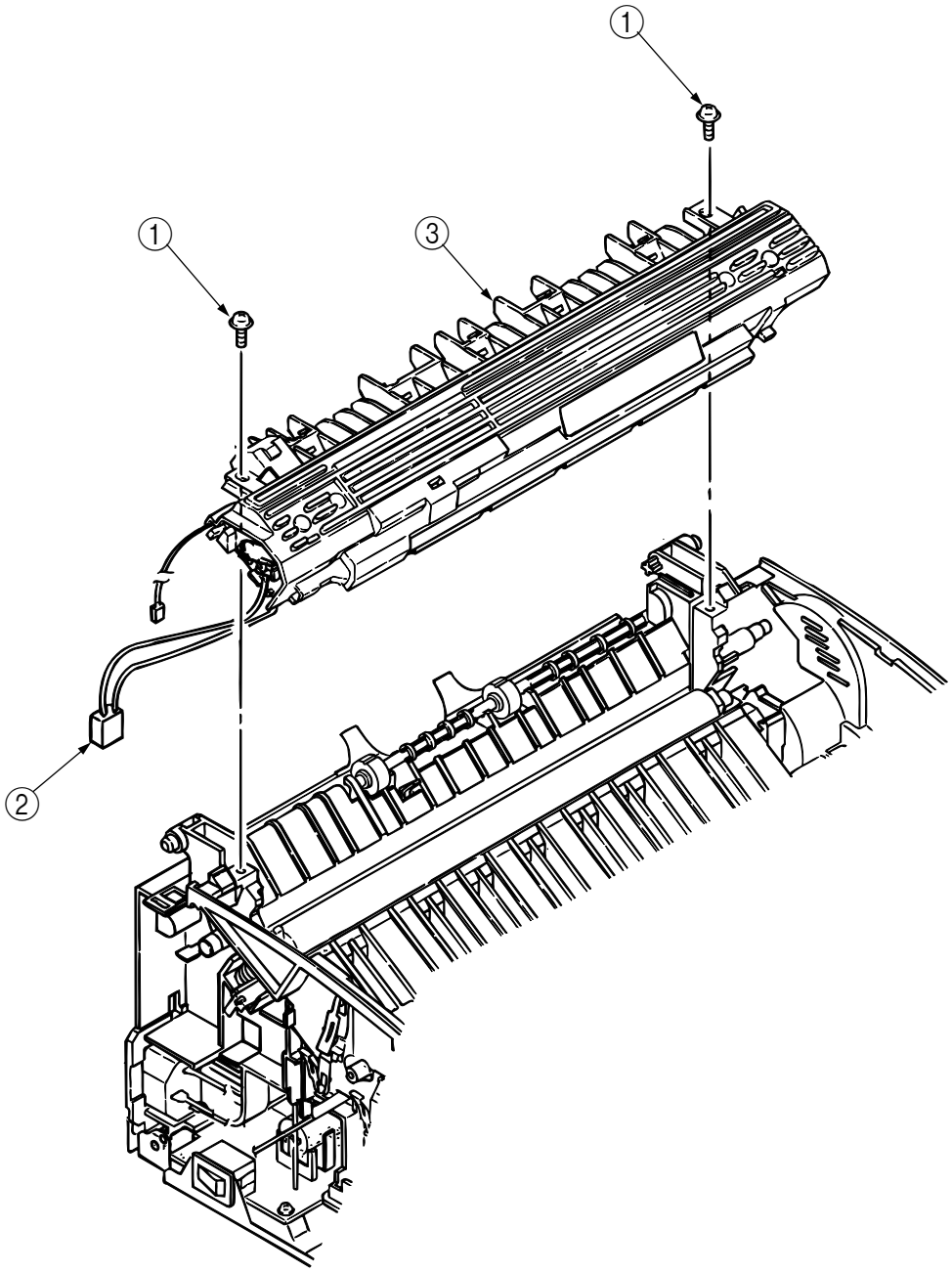
This section explains how to dismount the heat assy and parts in the assy.

<Dismounting the heat assy>

(1) Dismount the upper cover assy. (See Section 3.3.5.)

(2) Dismount the high-voltage power supply board (P3H). (See Section 3.3.6.)

(3) Remove two screws ①, disconnect connector ②, and dismount heat assy ③.



3.3.11 Drive Shaft E (Eject) and Eject Roller

(1) Dismount the upper cover assy. (See Section 3.3.5.)

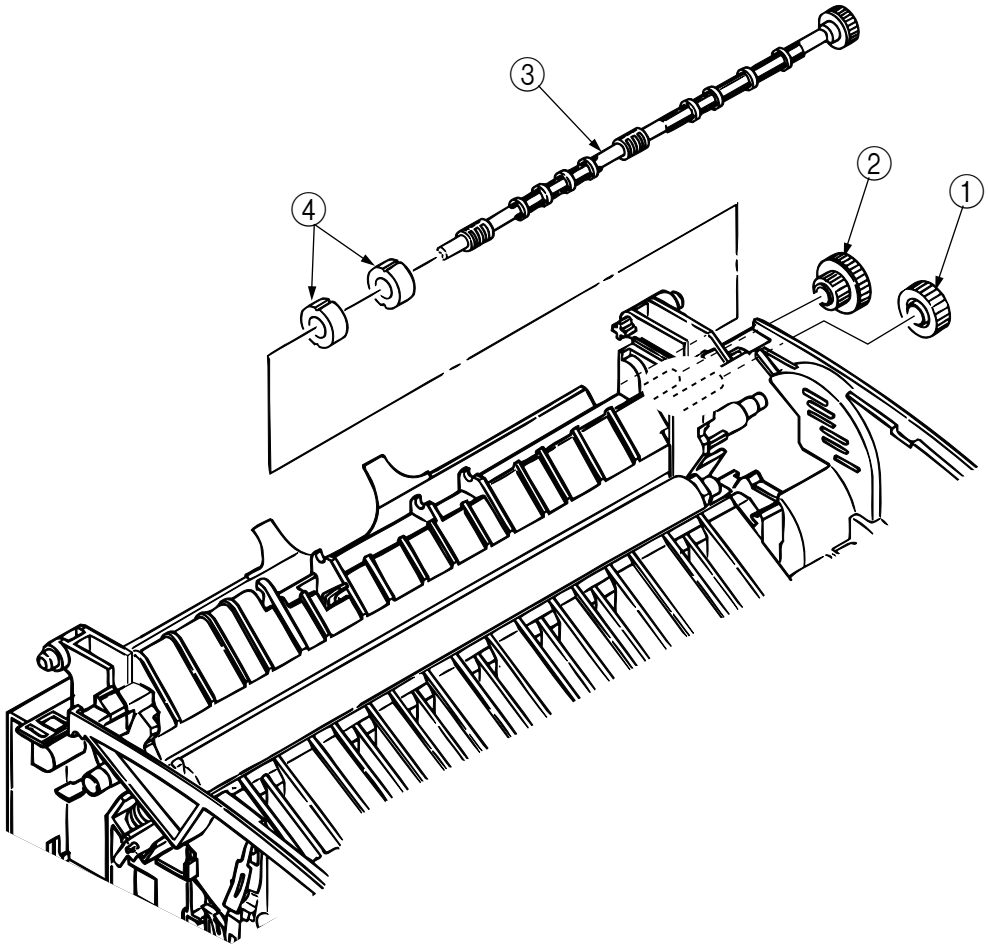
(2) Dismount top cover assy. (See Section 3.3.7.)

(3) Dismount the heat assy. (See Section 3.3.10.)

(4) Dismount idle gear E (A) ① and idle gear E (B) ②.

(5) Unlock and dismount drive shaft E (Eject) ③.

(5) Dismount two eject rollers ④.



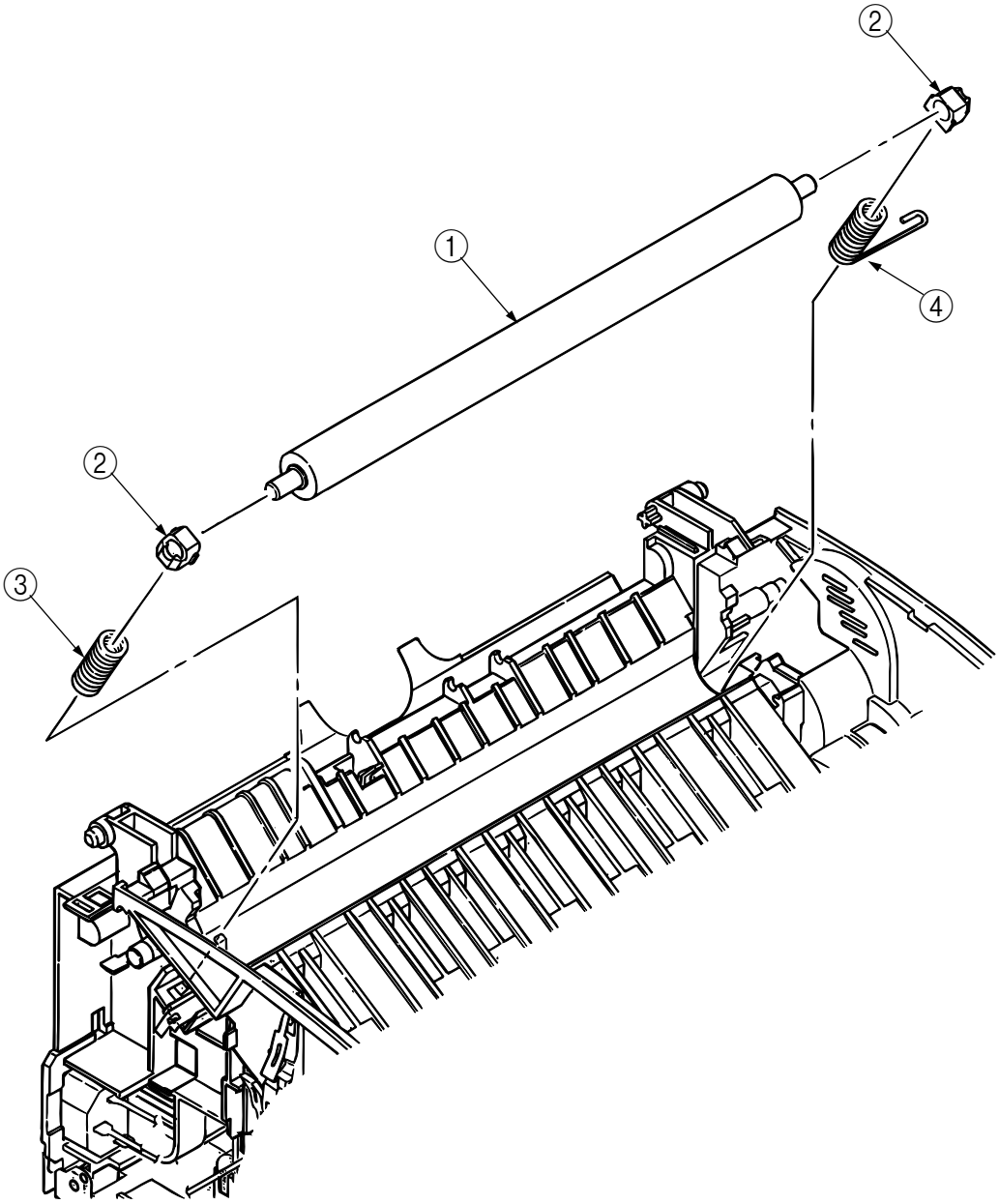
3.3.12 Pressure Roller B (Back Up Roller)

(1) Dismount the upper cover assy. (See Section 3.3.5.)

(2) Dismount the high-voltage power supply board (P3H). (See Section 3.3.6.)

(3) Dismount the heat assy. (See Section 3.3.10.)

(4) Dismount the engagement with the left ground, then pressure roller B①. (Two bearing BUs ② and two bias springs ③ also come off at the same time.)



3.3.13 Separator Guide

(1) Dismount the upper cover assy. (See Section 3.3.5.)

(2) Dismount the high-voltage power supply board (P3H). (See Section 3.3.6.)

(3) Remove four screws ①.

(4) Dismount inlet ② from base frame ③.

<Dismounting inlet ②>

Insert a screwdriver into the hole on the side of base frame ③, remove the inlet claw from base frame ⑧, and dismount inlet ②.

(5) Disconnect three cables ④ and connector ⑪ and dismount base frame ③. Then, remove screw ⑩.

<Disconnecting connector ⑪, ⑫>

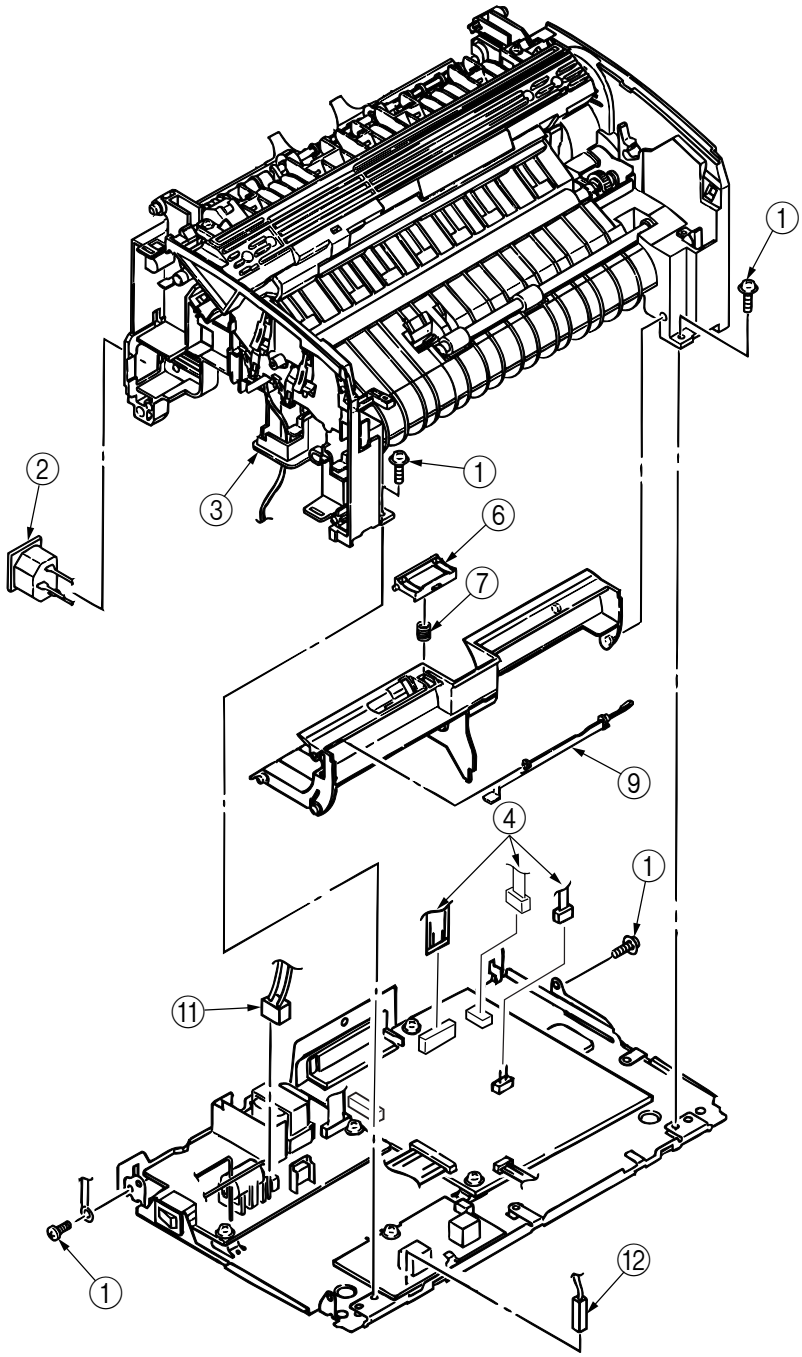
Dismount connector ⑪ by drawing it upward while pushing the clamp lever with a standard screwdriver.

(6) Dismount the paper holder assy. (See Section 3.3.8.)

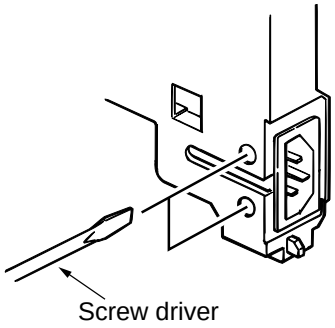
(7) Dismount two engagements and sheet guide ⑤.

(8) Dismount separator assy ⑥, compression spring S⑦.

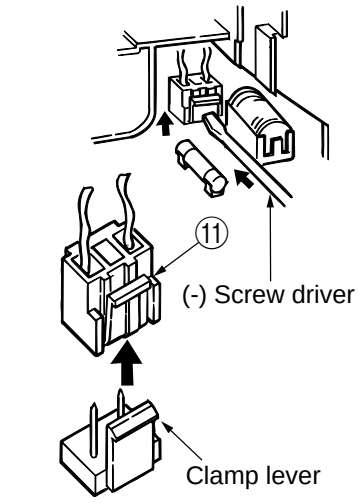
(9) Dismount paper sensor E⑨.



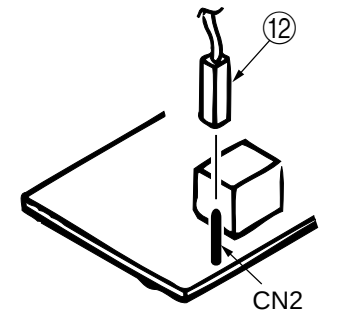
<Dismount Inlet>



<Disconnecting Connector>



<Disconnecting Connector>



3.3.14 Pulse Motor (Main)

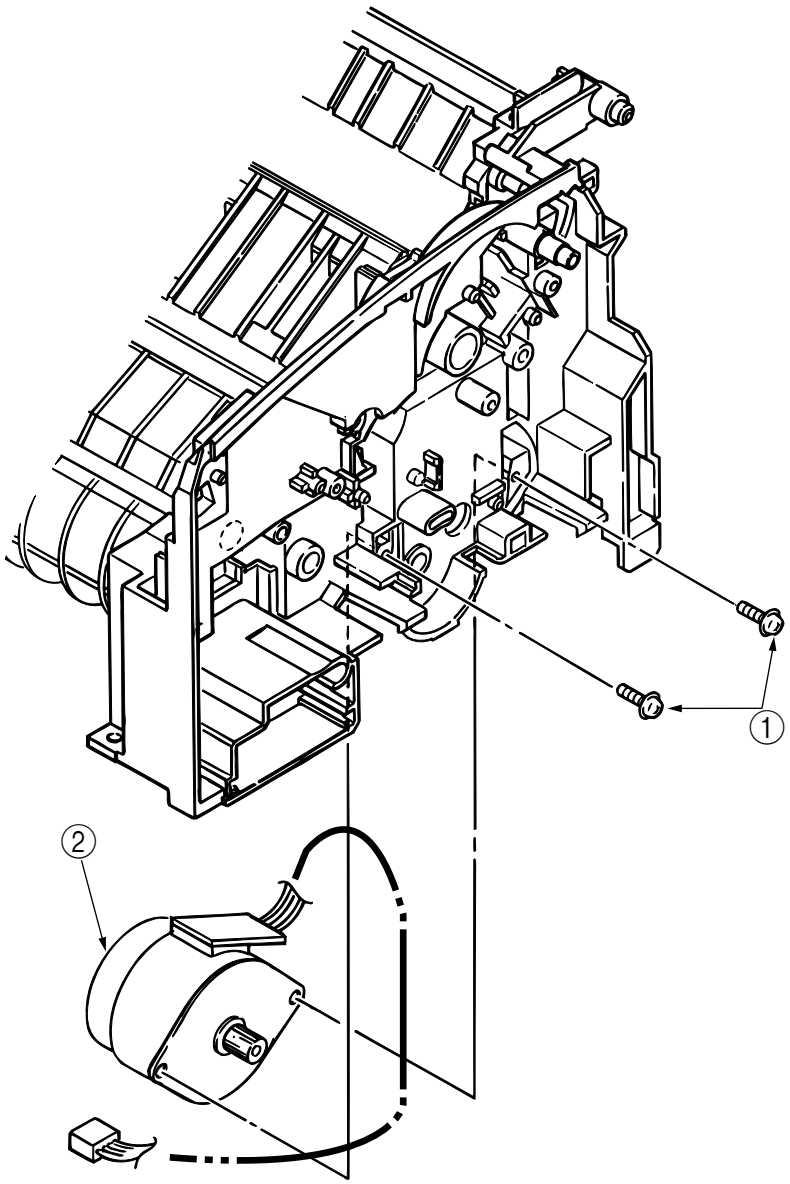
(1) Dismount the upper cover assy. (See Section 3.3.5.)

(2) Dismount the high-voltage power supply board (P3H). (See Section 3.3.6.)

(3) Dismount side plate M. (See Section 3.3.9.)

(4) Dismount the base frame. (See Section 3.3.13.)

(5) Remove two screws ① and dismount pulse motor (main) ②.



3.3.15 Hopping Shaft Assy

(1) Dismount the upper cover assy. (See Section 3.3.5.)

(2) Dismount the high-voltage power supply board (P3H). (See Section 3.3.6.)

(3) Dismount the base frame. (See Section 3.3.13.)

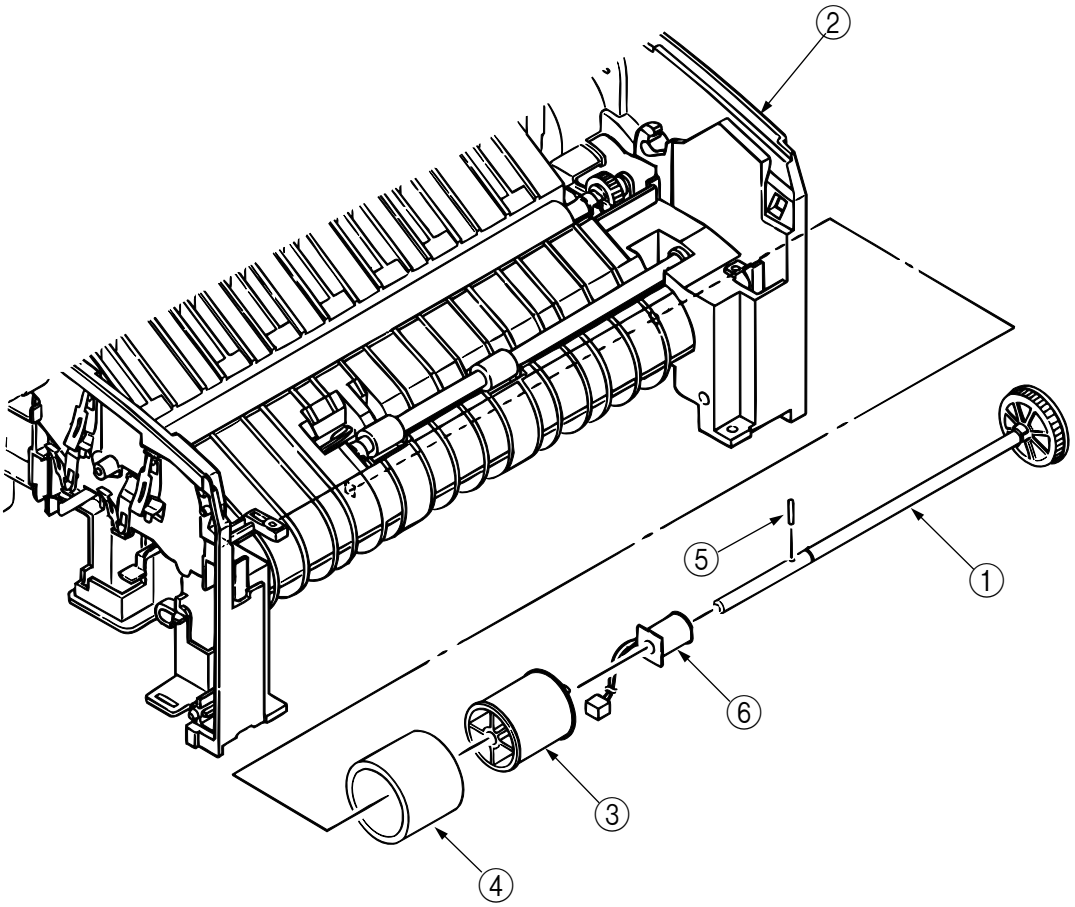
(4) Dismount the paper holder assy. (See Section 3.3.8.)

(5) Dismount the sheet guide. (See Section 3.3.13.)

(6) Dismount side plate M. (See Section 3.3.9.)

(7) Raise up roller holder ③, slide hopping shaft assy ①, and dismount roller holder ③ and hopping roller ④. (Knock pin ⑤ also comes off at the same time. Take care not to lose it.)

(8) Draw out hopping shaft assy ① to the right and dismount magnet H⑥.

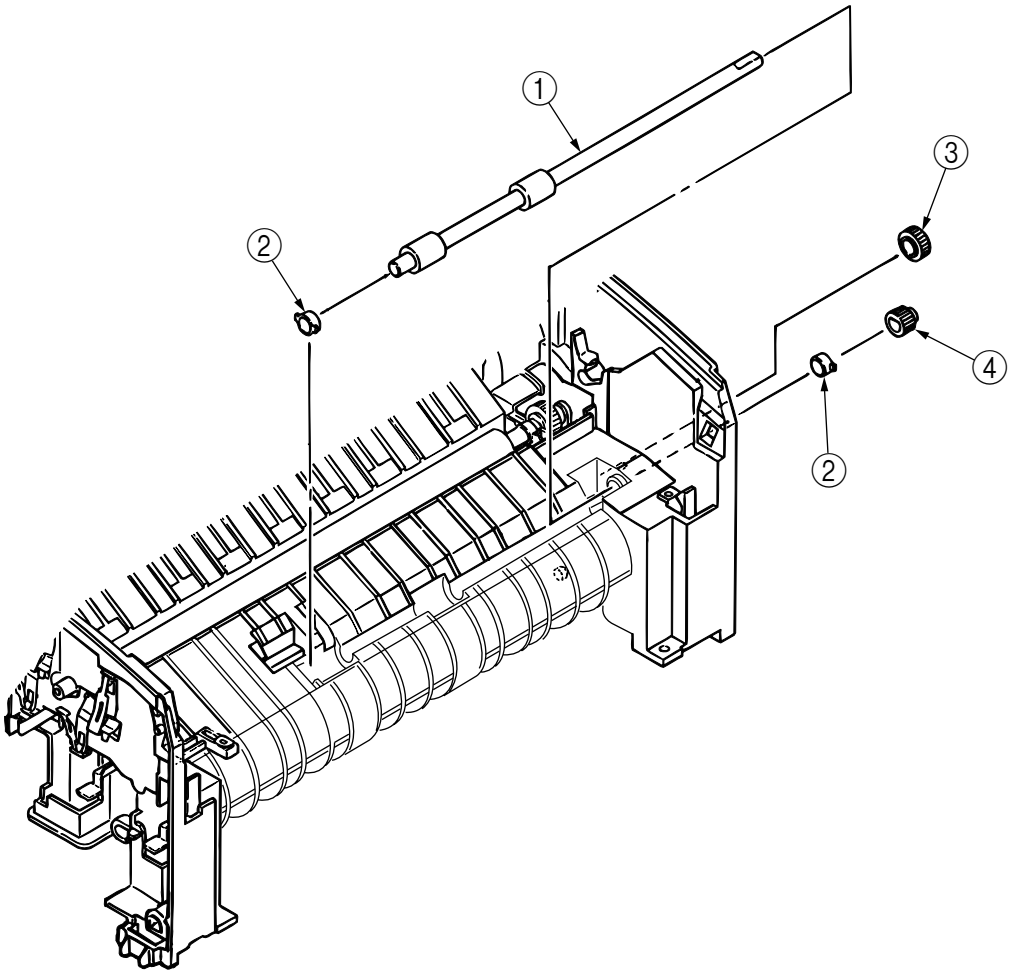


3.3.16 Regist Roller

(1) Dismount the hopping shaft assy. (See Section 3.3.15.)

(2) Dismount Idle gear R ③ and Gear R ④.

(3) Move regist roller ① to the right and dismount it by lifting. (Two regist bearings ② also come off at the same time. Take care not to lose them.)



3.3.17 Paper Sensor E, Paper Sensor Exit and Toner Sensor Assy

(1) Dismount the upper cover assy. (See Section 3.3.5.)

(2) Dismount the high-voltage power supply board (P3H). (See Section 3.3.6.)

(3) Dismount the base frame. (See Section 3.3.13.)

(4) Dismount the paper holder assy. (See Section 3.3.8.)

(5) Dismount the sheet guide. (See Section 3.3.13.)

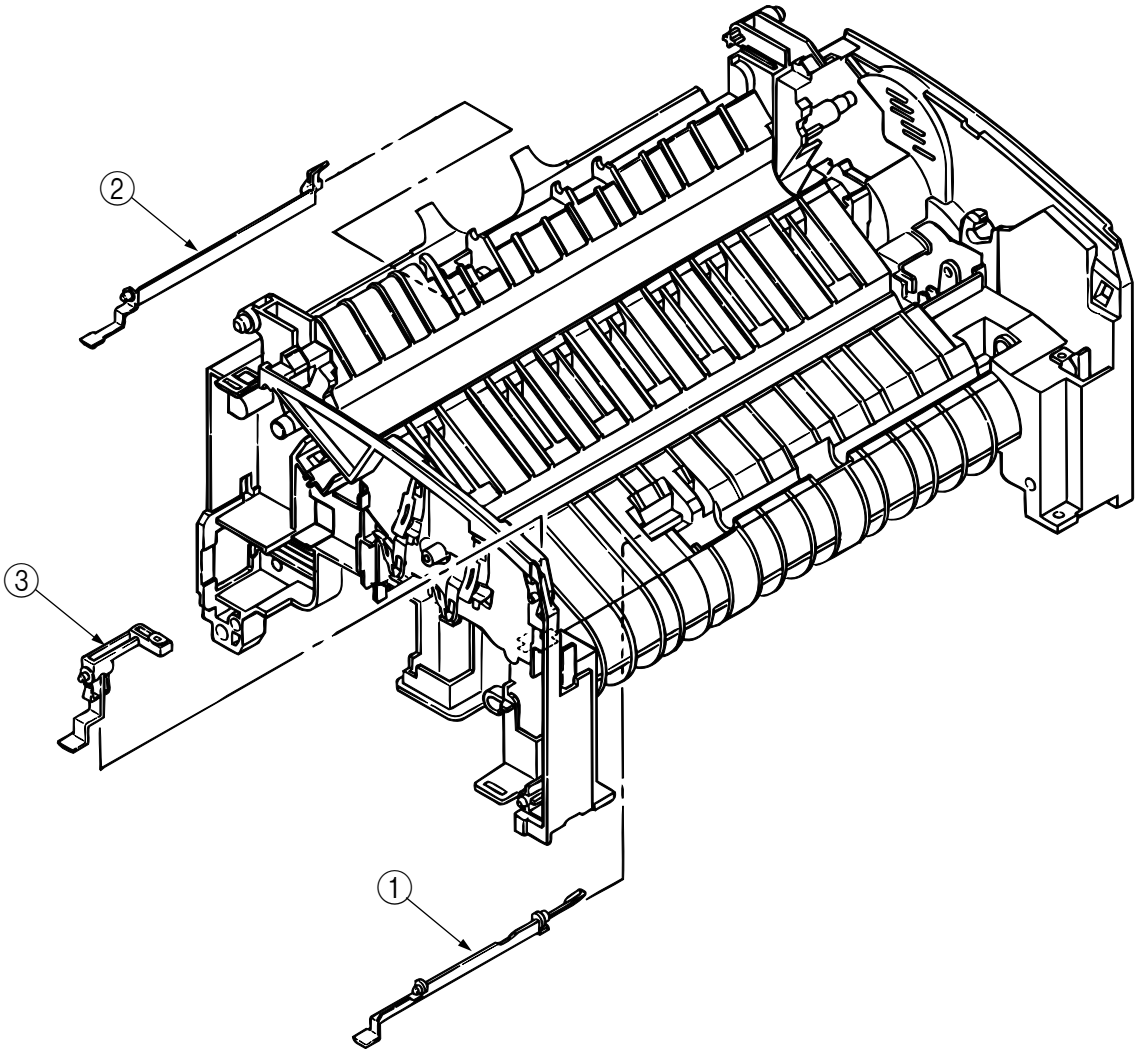
(6) Dismount the heat assy. (See Section 3.3.10.)

(7) Dismount drive shaft E. (See Section 3.3.11.)

(8) Dismount paper sensor E①.

(9) Dismount paper sensor exit ②.

(10) Dismount toner sensor assy ③.



3.3.18 Base Plate

⚠Warning	Risk of Electric Shock	

There is a risk of electric shock during replacement of the low voltage power supply.

Use insulating gloves or avoid direct contact with any conducting part of the power supply, and caution should be exercised during replacement.

The capacitor may take one minute to complete discharge after the AC cord is unplugged. Also, there is a possibility that the capacitor doesn't discharge because of a breakage of the PCB, etc., so remember the possibility of electric shock to avoid electric shock.

(1) Dismount the upper cover assy. (See Section 3.3.5.)

(2) Dismount the base frame. (See Section 3.3.13.)

(3) Remove two screws ①, disconnect connector ②, and dismount power supply unit ③.

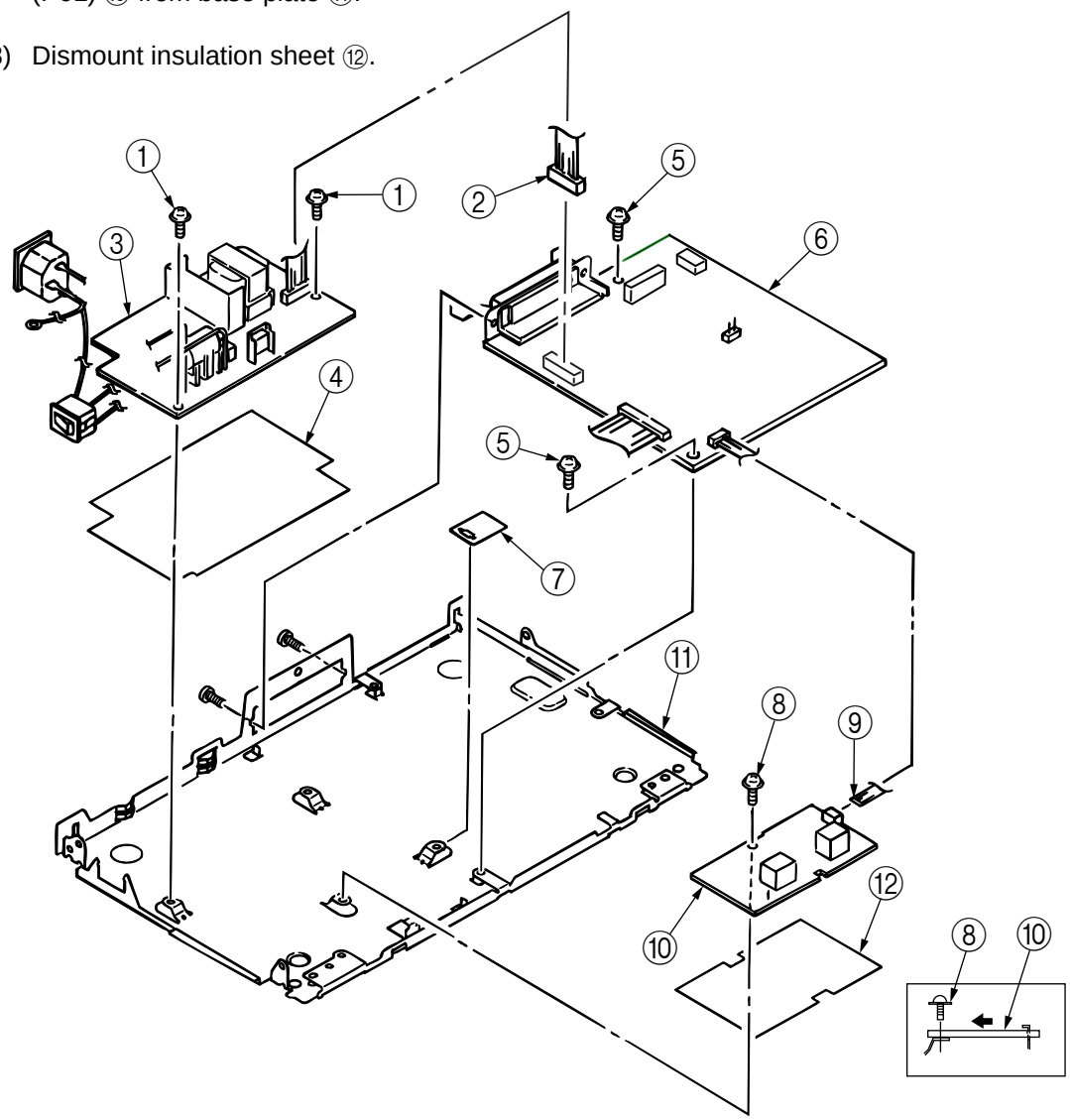
(4) Dismount insulation sheet ④.

(5) Remove five screws ⑤ and dismount main control board ⑥.

(6) Dismount insulation sheet ⑦.

(7) Remove screw ⑧ , disconnect connector ⑨ and dismount High Voltage Power Supply Board (P6L) ⑩ from base plate ⑪.

(8) Dismount insulation sheet ⑫.



4. ADJUSTMENT

This chapter explains adjustment necessary when a part is replaced.

This adjustment is made by changing the parameters values set in EEPROM on the main control board. The printer driver or maintenance utility can be used to change these values.

Only servicemen and maintenance personnel can use the maintenance utility. This utility cannot be made public for printer end users.

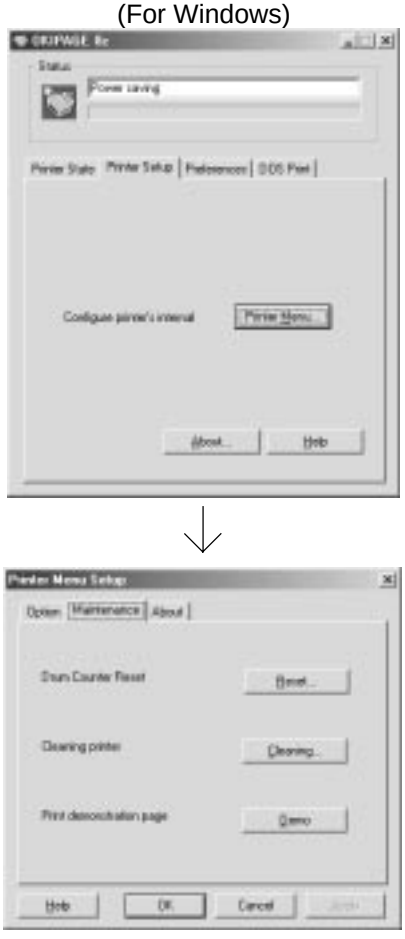
4.1 Adjustment Types and Functions

4.1.1 Printer Driver

This printer driver has the following functions:

- Drum counter reset
- Charge roller cleaning

(For Windows)



(For Macintosh)

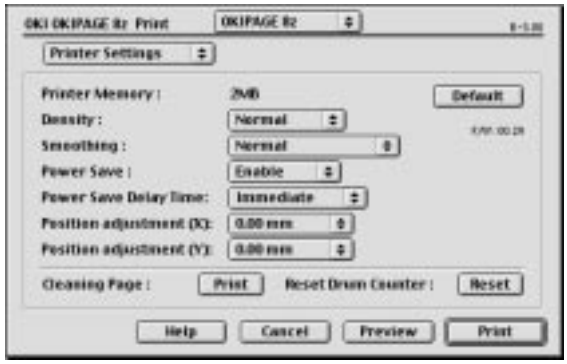


Figure 4-1

(1) Drum counter reset

This function resets the life of the drum counter when the EP unit is replaced. Clicking the "Reset" button resets the life.

(2) Charge roller cleaning

This function cleans the charge roller of the EP unit; it is used when printing is unclear. For details on how to operate this function, refer to "User's Manual."

4.1.2 Engine Maintenance Utility

See APPENDIX D.

4.2 Adjustment When Replacing a Part

The table below lists the parts that requires adjustment when they are replaced.

Part to be Replaced	Adjustment
LED head	Set the LED head drive time. Set the Optical Head Set the Strb Time
EP unit	Reset the drum counter. (Refer to "User's Manual".)
Main control board	Upload or download EEPROM data.

4.2.1 Setting LED Head Drive Time

Caution: When the liminous intensity of a new LED head is the same as that of the old LED head, do not set the LED head drive time.

Use “LED Head Making No.” in the engine menu tab of the maintenance driver to set the luminous intensity displayed on the LED head as the LED head drive time. (See Figure 4-2.)

- Luminous intensity of LED head

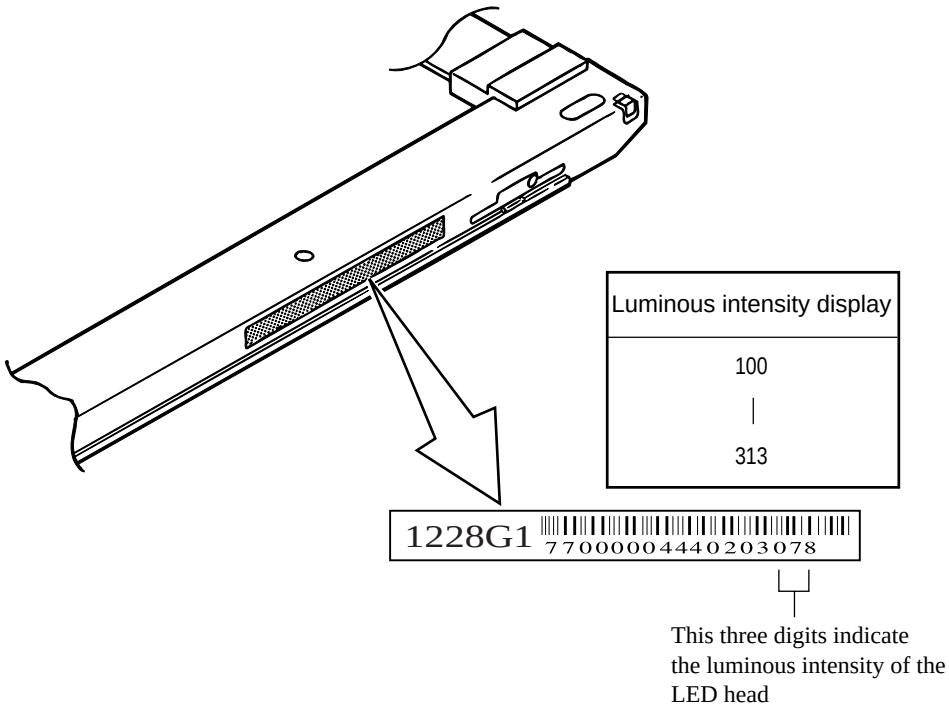


Figure 4-2

4.2.2 Uploading and Downloading EEPROM Data

When the main control board is replaced, EEPROM data must be reflected on a new main control board. Use “EEPROM Operations” in the Main Set tab of the maintenance utility to reflect EEPROM data on the new main control board. (See APPENDIX D)

Reflect EEPROM data on the new main control board in the following procedures:

(1) Check that the printer and PC are connected by the parallel I/F, then execute the maintenance utility.

(2) Click the “Option” button in “Main Menu Dialog”.

(3) Click the “Data Upload” button in “EEPROM Operations.” (EEPROM data read is completed.)

(4) The read EEPROM data is displayed in “Dialog” of the maintenance driver.

(5) Leave the display of the maintenance driver as is and replace the main control board.

(6) Click the “Data Download” button in “EEPROM Operations”. (EEPROM data write is completed.)

Depending on the level of a main control board failure (parallel I/O failure, etc.), however, EEPROM data may be unable to be uploaded.

In such a case, use the maintenance utility to perform the following adjustment after replacing the main control board:

- Setting the LED head drive time (Section 4.2.1)
- Setting the Optical Head
- Setting the Strb Time
- Setting the User (OEL / ODA / INT-A / INT-L)

5. PERIODICAL MAINTENANCE

5.1 Periodical Replacement Parts

Table 5-1 lists the part and unit to be replaced periodically.

Table 5-1 Routine Replacement Parts

Part Name	Replacement Time	Part to be Checked Simultaneously	Remarks
Toner cartridge (Type 6)	When "Toner Low" is displayed.	LED head	Consumables
EP unit (Type 6)	When "Change Drum" is displayed.		Consumables

Caution: Also reset the drum counter when replacing the I/D unit.

5.2 Cleaning

Remove any toner or dirt and clean the circumference and inside of the printer with a waste cloth.

Caution: Do not touch the OPC drum, LED lens array, and connector block of the LED head.

5.2.1 Cleaning the LED Lens Array

When a white belt or a white stripe (void, light printing) occurs in the vertical direction of the print surface, clean the LED lens array or replace the toner cartridge.

Caution: Be sure to use a LED head cleaner to clean the LED lens array.

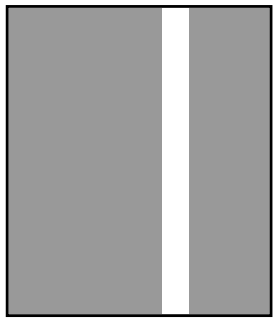


Figure 5-1

(1) Set the LED head cleaner in the LED lens array, as shown in the figure below, and slide the cleaner left and right several time to clean the head.

Caution: Do not press the LED head cleaner against the LED lens array.

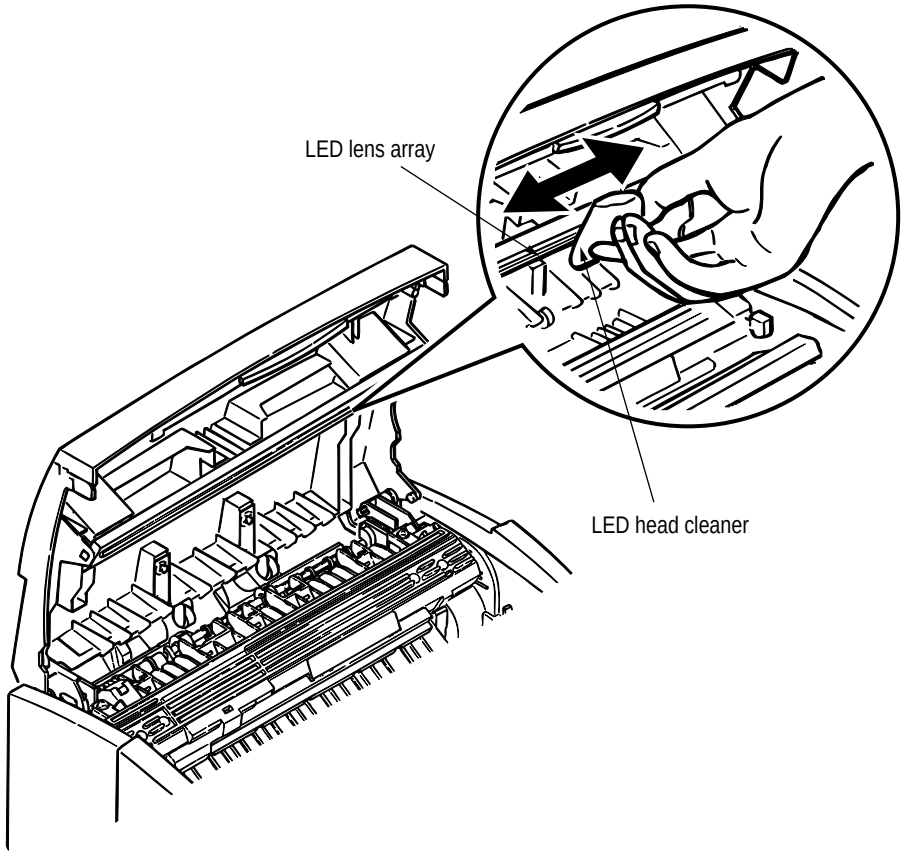


Figure 5-2

6. TROUBLESHOOTING PROCEDURES

6.1 Troubleshooting Tips

(1) Check the basic check points written in the user's manual.

(2) Gather detailed failure information as much as possible from the customer.

(3) Check the printer under the condition close to that under which the failure occurred.

6.2 Check Points Before Correcting Image Problems

(1) Is the printer running in proper ambient conditions?

(2) Are consumables (toner and EP unit) replaced correctly?

(3) Are sheets of paper normal?

(4) Is the EP unit set correctly?

6.3 Notes When Correcting Image Problems

(1) Do not touch the surface of the OPC drum nor place foreign matter on it.

(2) Do not expose the OPC drum to direct sunlight.

(3) Do not touch the fuser because it heats up during operation.

(4) Do not expose the image drum to light for more than five minutes at room temperature.

6.4 Preparation Before Troubleshooting

(1) Message display

The failure status of the OKIPAGE 8w Lite/8z is displayed on the status monitor of the PC.

Take proper action according to the message displayed on the status monitor.

(2) LED display

The OKIPAGE 8w Lite/8z is equipped with only one LED. This LED indicates one of the following statuss:

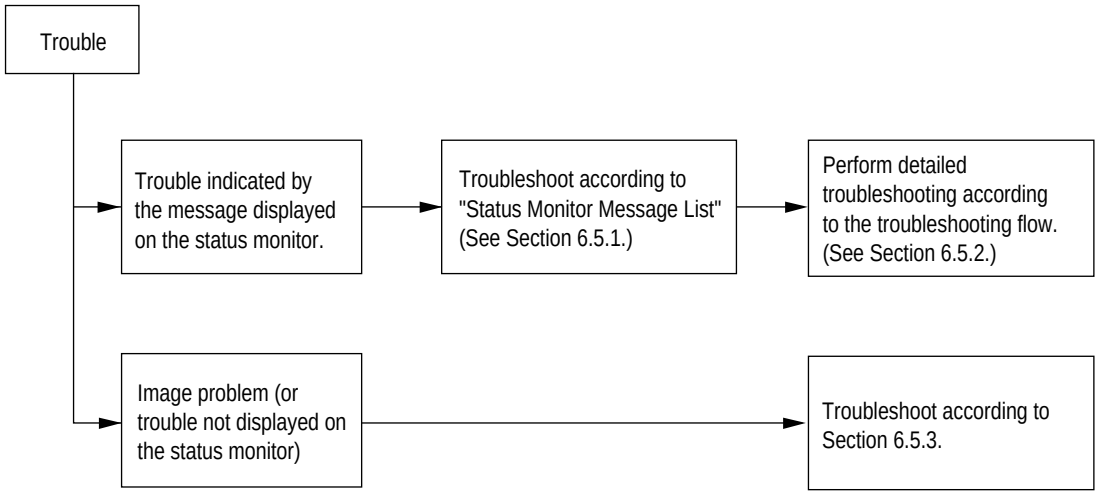
LED Functions

Printer Status	LED Indication
Ready	Lighting
Printing in progress	Blink (*1)
Recoverable alarm	Blink (*2)
Unrecoverable alarm	Blink (*3)

*1: The LED blinks at a cycle of 1 second (0.5s ON) from data reception to printing end.
*2: The LED blinks at a cycle of 0.24 second (0.12s ON).
*3: The LED blinks at a cycle of 0.24 second (0.12s ON).

6.5 Troubleshooting

If a trouble occurs in the OKIPAGE 8w Lite/8z, troubleshoot according to the following procedures:


Trouble
Trouble indicated by the message displayed on the status monitor.
Troubleshoot according to "Status Monitor Message List" (See Section 6.5.1.)
Perform detailed troubleshooting according to the troubleshooting flow. (See Section 6.5.2.)
Image problem (or trouble not displayed on the status monitor)
Troubleshoot according to Section 6.5.3.

6.5.1 Status Monitor Message List

Table 6-1 lists the statuses and troubles to be displayed on the status monitor in the message format.

Table 6-1

Category	Status Message	OPEL Code	Display Content	Remedy
Normal status	Warming Up	18 00	Warming-up status	Normal operation
	Online (Ready)	00 10	Online (ready) status	Normal operation
	Power Save Mode	00 20	Power save status	Normal operation
	Device Active	0040	Device is Active	Device is in operation. Wait until it completes the proceeding.
	Toner Low	10 00	The toner amount of the toner cartridge is small.	Normal operation
	Toner Sensor	10 01	The I/D unit is not installed or the toner sensor is faulty.	Install the I/D Unit or replace the toner sensor.
	Change Drum	10 02	Life of I/D drum	Change the I/D Unit
	Manual Paper In	12 20	The paper is in the manual feed mode.	Replace the I/D unit. (***Note:*** Be sure to reset the drum counter after replacing the I/D unit.)
	Printing In Progress	14 2X	Printing in progress X=0, Non Warning X=1, Toner Low X=2, 3 Change Drum	Normal operation
	Ejection In Progress	14 3X	Ejection in progress X=0, Non Warning X=1, Toner Low X=2, 3 Change Drum	Normal operation
	Manual Request Executive Letter Legal 14 Legal 13 A6 A5 A4 B5 Monarch COM-10 DL C5 COM-9	 16 01 16 02 16 03 16 04 16 18 16 19 16 1A 16 21 16 50 16 51 16 5A 16 5B 16 7F	Request the paper to be set in the manual feed mode. The paper sizes are as follows: Executive, Letter, Legal 14, Legal 13, A4, A5, A6, B5, Monarch, DL, C5, COM-10, COM-9	Set the requested paper in the manual feed mode.

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Table 6-1 (Cont'd)

Category	Status Message	OPEL Code	Display Content	Remedy
Paper size error	Paper Size Error	30 00	Paper of improper size was fed. 2.52" (64 mm) L 15.77" (400.56 mm)	Check the paper. Also check whether more than one sheet of paper were fed simultaneously. To release the error display, open the cover, then close it. If this error occurs frequently, see Section 6.5.2 3.
Paper jam	Paper Input Jam	31 00	A paper jam occurred when sheets of paper were being supplied.	Check the paper. To release the error display, close the cover, then close it. If this error occurs frequently, see Section 6.5.2 2-1.
	Paper Feed Jam	32 00	A paper jam occurred during paper feeding.	Open the cover, then remove the jammed paper. To release the error display, close the cover. If this error occurs frequently, see Section 6.5.2 2-2.
	Paper Exit Jam	33 00	A paper jam occurred during paper ejection.	Open the cover, then remove the jammed paper. To release the error display, close the cover. If this error occurs frequently, see Section 6.5.2 2-3.
	ID Not Installed	42 00		Installed I/D Unit
Cover open	Cover Open	4F 00	The upper cover is open.	To release the error display, close the cover. If this error occurs frequently, replace the power supply board.
Buffer overflow	Print Over Run	41 01 ~ 41 7F	A print overrun occurred because print data is complicated.	To release the error display, press the reset button on the status motor of the printer driver. Simplify the print data format.
	Print Under Run	41 80	The page buffer overflowed because there are a large number of print data.	To release the error display, press the reset button on the status motor of the printer driver. Install RAM or reduce the number of print data.
Device configuration error	Program ROM Check Error	60 10	An error occurred during program ROM check.	Replace program ROM or the main control board. (When replacing the main control board, also adjust EEPROM data.) (See Section 4.2.4.)
	Resident RAM Check Error	60 30	An error occurred during resident RAM check.	Replace the main control board. (When replacing the main control board, also adjust EEPROM data.) (See Section 4.2.4.)

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Table 6-1 (Cont'd)

Category	Status Message	OPEL Code	Display Content	Remedy
Device configuration error	EEPROM Check Error	60 40	An error occurred during EEPROM check.	Replace the main control board. (When replacing the main control board, also adjust EEPROM data.) (See Section 4.2.4.)
	Option RAM Check Error	60 60	An error occurred during option RAM check.	Check the connection of the Option RAM PC board. If the option RAM PC board is faulty, replace it.
	Fuser Error	60 80	A heater timeout error occurred.	See Section 6.5.2 4.
	Thermister Open Check Error	60 91	The thermistor is open.	Replace the heater Assy.
	Thermister Short Check Error	60 92	A thermistor short occurred.	Replace the heater Assy.
	Toner Sensor Error	60 93	Toner sensor error	Either the Toner Sensor is out of order, or the Drum Unit is not installed. Please check.
	Electoromagnetic Clutch Error	60 94	Electoromagnetic clutch error	Printer controller error has occured. If turning the printer off/on does not clear the error, contact your dealer.
	Watch Dog Timeout Error	60 C0	A watchdog timeout occurred.	To release the error display, turn on the power supply again. Replace the main control board.
	Motor Timeout Error	60F0	A motor timeout occurred.	To release the error display, turn on the power supply again. Replace the main control board.

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6.5.2 Status Message Troubleshooting

Some failures cannot be corrected according to the status message trouble list. Troubleshoot these failures according to the following troubleshooting flowcharts:

No.	Item	Flowchart No.
1.	The OKIPAGE 8w Lite/8z malfunctions after the power supply has been turned on.	①
2.	Jam error ├ Paper input jam ├ Paper feed jam └ Paper exit jam	 ②-1 ②-2 ②-3
3.	Paper size error	③
4.	Fusing error	④

Caution: When replacing the main control board troubleshooted according to the troubleshooting flowcharts, also adjust EEPROM data. (See Section 4.2.2)

① The OKIPAGE 8w Lite/8z malfunctions after the power supply has been turned on.

• Turn the power supply off, then on again.

• Is the LED lamp on?

- • No Is the AC cable connected correctly?
  - • No Connect the AC cable correctly.
- • Yes Is +5 V supplied between CN1 Pin7 and CN1 Pin13 of the high-voltage power supply board (P3H)?
  (Pin7 : +5V, Pin13 : 0V)
  - • No Are the CN1 connectors of the high-voltage power supply board (P3H) and main control board connected correctly?
    - • No Connect the CN1 connectors correctly.
  - • Yes Is +5 V supplied between CN7 Pin2 and CN7 Pin3 of the main control board?
    (Pin2 : +5V, Pin3 : 0V)
    - • No Replace the high-voltage power supply board(P3H).
  - • Yes Replace the main control board.
- • Yes Is 1-2 V voltage supplied between CN1 Pin2 and CN1 Pin13 of the high-voltage power supply board(P3H)?
  - • No Replace the main control board.
- • Yes Replace the high-voltage power supply board(P3H).

• Yes Replace the main control board.

[JAM error]

②-1 Paper input jam

- Does a paper input jam occur when the power supply is turned on?
  - Yes — Is the jammed paper on paper sensor?
    - Yes — Remove the jammed paper.
  - No — Is paper sensor (manual feed/paper) operating normally?
    - No — Replace paper sensor (manual feed or paper).
  - Yes — Replace the high-voltage power supply board(P3H).
- No — Does a paper input jam occur during paper loading?
  - Yes — Is the paper already fed to paper sensor (manual feed)?
    - Yes — Is paper sensor (manual feed) operating normally?
      - No — Replace paper sensor (manual feed).
    - Yes — Check the gear block or replace high-voltage power supply board(P3H).
  - No — Is the paper already fed to paper sensor (paper)?
    - Yes — Is paper sensor (paper) operating normally?
      - No — Replace paper sensor (paper).
    - Yes — Replace high-voltage power supply board(P3H).
  - No — Replace the hopping roller or friction pad.
- No — Is the hopping roller rotating?
  - Yes — Check the coil resistance of magnet H. Is the resistance normal (about 120 Ω)?
    - No — Replace magnet H.
  - Yes — Is +26 V supplied between CN2 Pin1 and CN2 Pin2 of the main control board?
    - No — Replace the main control board.
  - No — Check the gear block or replace the hopping shaft assy.
- No — Are the CN1 connectors of the pulse motor (main) and main control board connected?
  - No — Connect the CN1 connectors correctly.
- Yes — Measure the resistance of the pulse motor (main). Is the resistance normal (about 3.8 Ω)?
  - No — Replace the pulse motor (main).
- Yes — Replace the main control board.

[JAM error]

②-2 Paper feed jam

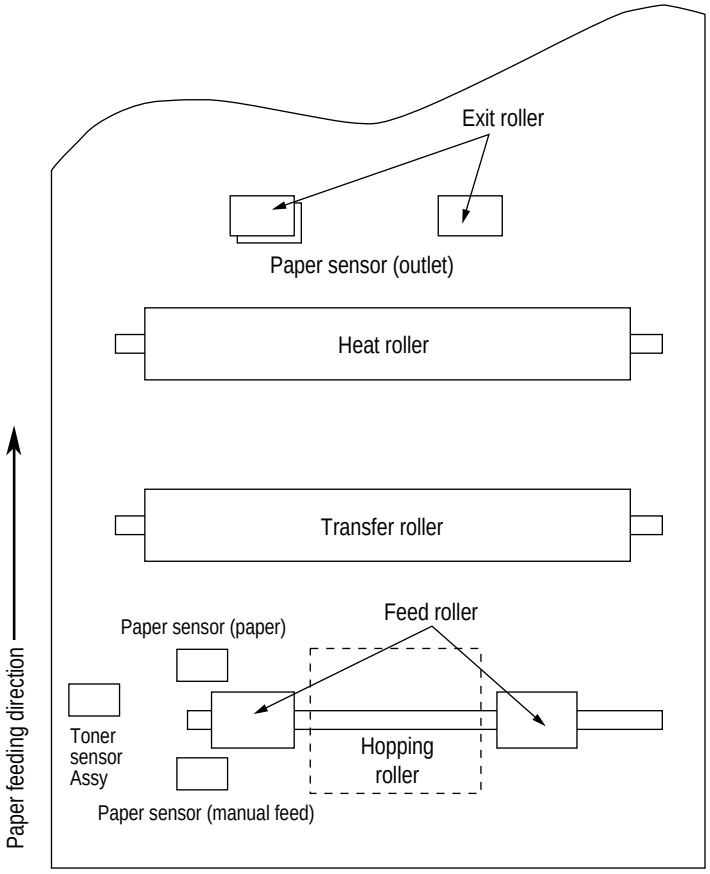
- Does a paper feed jam occur when the power supply is turned on?
  - Yes — Is the jammed paper on paper sensor (paper/outlet)?
    - Yes — Remove the jammed paper.
  - No — Is paper sensor (outlet/paper) operating normally?
    - No — Replace paper sensor (outlet or paper).
  - Yes — Replace the high-voltage power supply board(P3H).
- No — Has the paper arrived at paper sensor (paper)?
  - No — Is the feed roller rotating?
    - No — Check the gear block.
  - Yes — Is the I/D unit set correctly?
    - No — Set the I/D unit correctly.
  - Yes — Check the gear block.
- Yes — Has the paper arrived at the paper sensor (outlet)?
  - Yes — Is the paper sensor (outlet) operating normally?
    - No — Replace the paper sensor (outlet).
  - Yes — Replace the high-voltage power supply board(P3H).
- No — Check the gear block.

②-3 Paper exit jam

- Does a paper exit jam occur when the power supply is turned on?
  - Yes — Is the jammed paper on the paper sensor (outlet)?
    - Yes — Remove the jammed paper.
  - No — Is the paper sensor (outlet) operating normally?
    - No — Replace the paper sensor (outlet).
  - Yes — Replace the high-voltage power supply board(P3H).
- No — Check the gear block or replace the eject roller.

③ Paper size error

- Is the paper of the specified size being use?
  - No — Use paper of the specified size.
- Yes — Is paper sensor (paper) operating normally?
  - No — Replace paper sensor (paper) or clean the inlet sensor on the high-voltage power supply board(P3H).
- Yes — Is the paper sensor (outlet) operating normally?
  - No — Replace the paper sensor (outlet) or clean the outlet sensor on the high-voltage power supply board(P3H).
- Yes — Replace the high-voltage power supply board(P3H).



④ Heat assy error

- Turn the power supply off, then on again.
- Does the Halogen lamp of the heat assy go on?
  - No — Is the Halogen lamp or thermostat disconnected?
    - Yes — Replace the heat assy.
    - No — Replace the power supply unit.
  - Yes — Are the CN7 connectors of main control board and the power supply unit connected correctly?
    - No — Connect the CN7 connectors correctly.
    - Yes — Replace the main control board.

6.5.3 Image Troubleshooting

This section explains how to troubleshoot when an image problem is output as a result of the printing.

Figure 6-3 is an example of image problem output.

Symptom	Flowchart No.
An image is light or blurred entirely. (Figure 6-3, Ⓐ)	①
Dark background density (Figure 6-3, Ⓑ)	②
A blank paper is output. (Figure 6-3, Ⓒ)	③
Vertical block belt/black stripe (Figure 6-3, Ⓓ)	④
Cyclical defect (Figure 6-3, Ⓔ)	⑤
Print void	⑥
Poor fusing (An image is blurred or peeled off when it is touched.)	⑦
Vertical white belt/white stripe (Figure 6-3, Ⓕ)	⑧

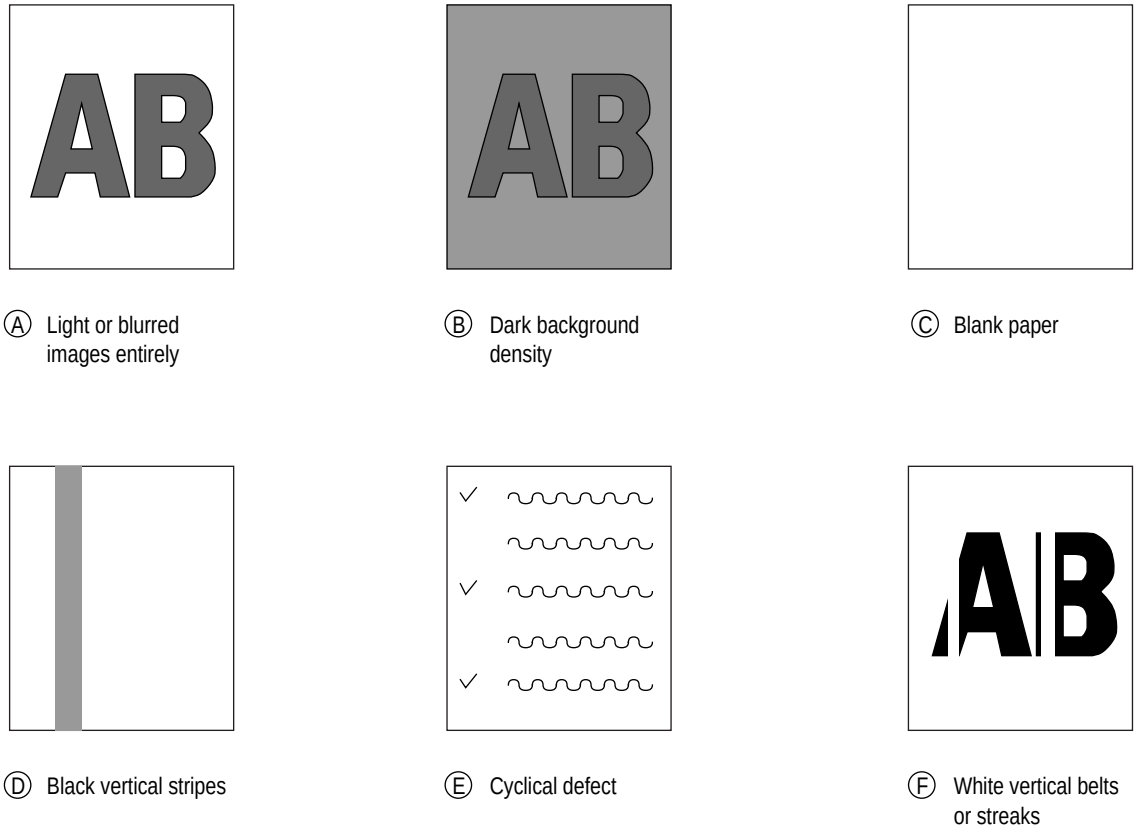


Figure 6-3 Image Problems

① An image is light or blurred entirely.

- Is the toner low? (Is "Toner Low" being displayed?)
  - • Yes Supply a toner.
- No Is the specified paper being used?
  - • No Use the specified paper.
- Yes Is the lens of the LED head dirty?
  - • Yes Clean the LED head.
- No Is the LED head installed correctly?
  Check the HEAD connector of the main control board.
  - • No Install the LED head correctly.
- Yes Is the contact plate of the transfer roller in correct contact with the high-voltage power supply board(P3H)? (See Figure 6-4 Ⓕ.)
- Yes Is the terminal of the I/D unit in correct contact with the contact plate? (See Figure 6-4 Ⓐ and Ⓑ)?
  - • No Contact the terminal correctly.
- Yes Replace the transfer roller.
- Has this error been recovered?
  - • Yes End
- No Replace the I/D unit.
- Has this error been recovered?
  - • Yes End

    Caution: After replacing the I/D unit, reset the drum counter. (Refer to "Replacing the Drum Cartridge" in "User's Manual".)
- No Replace the main control board, high-voltage power supply board(P6L) or high-voltage power supply board(P3H).

② Dark background density

- Has the OPC drum being exposed to external light?
  - • Yes Set the OPC drum in the OKIPAGE 8w Lite/8z and wait for about 30 minutes.

No Is the heat roller of the heat assy dirty?

- • Yes Clean the heat roller.

No Is the terminal of the I/D unit in correct contact with the contact plate? (See Figure 6-4 Ⓓ and Figure 6-5 Ⓓ.)

- • No Contact the terminal correctly.

Yes Replace the I/D unit.

- Has this error been recovered?
  - • Yes End

    Caution: After replacing the I/D unit, reset the drum counter. (Refer to "Replacing the Drum Cartridge" in "User's Manual".)

No Replace the main control board, high-voltage power supply board(P3H) or high-voltage power supply board(P6L).

③ A blank paper is output.

- Is the LED head connected correctly.
  Check the HEAD connector of the main control board.
  - • No Connect the LED head correctly.

Yes Is the terminal of the I/D unit in correct contact with the contact plate? (See Figure 6-5 Ⓔ.)

- • No Contact the terminal correctly.

Yes Replace the LED head.

- Has this error been recovered?
  - • Yes End

    Caution: Set the LED head drive time when replacing the LED head. (See Section 4.2.1.)

No Replace the main control board, high-voltage power supply board(P3H) or high-voltage power supply board(P6L).

④ Vertical black belt/stripe

• Replace the I/D unit.

• Has this error been recovered?

• Yes End

Caution: After replacing the I/D unit, reset the drum counter. (Refer to "Replacing the Drum Cartridge" in "User's Manual".)

No Replace the LED head.

• Has this error been recovered?

• Yes End

Caution: Set the LED head drive time when replacing the LED head. (See Section 4.2.1.)

No Replace the main control board, high-voltage power supply board(P3H) or high-voltage power supply board(P6L).

⑤ Cyclic defect

	Cycle	Remedy
EP drum	1.98" (50.3 mm)	Clean or replace the I/D unit.
Developing roller	1.44" (36.6 mm)	Replace the I/D unit.
Toner supply roller	2.63" (66.8 mm)	Replace the I/D unit.
Charge roller	0.81" (20.6 mm)	Replace the I/D unit.
Cleaning roller	0.81" (20.6 mm)	Replace the I/D unit.
Transfer roller	1.71" (43.4 mm)	Replace the I/D unit.
Heat roller	2.46" (62.5 mm)	Replace the heater Assy.
Pressure roller B	2.35" (59.7 mm)	Replace pressure roller B.

Caution: After replacing the I/D unit, reset the drum counter. (Refer to "Replacing the Drum Cartridge" in "User's Manual".)

⑥ A blank paper is output.

- Is the contact plate of the transfer roller in correct contact with the high-voltage power supply board?
  - • No — Contact the contact plate of the transfer roller correctly.

Yes — Replace the transfer roller.

- Has this error been recovered?
  - • Yes — End

No — Is the terminal of the I/D unit in correct contact with the contact plate? (See Figure 6-4 ⒶⒷⒸⒺ and Figure 6-5 ⒶⒷⒸⒹⒺ.)

- • No — Contact the terminal of the I/D unit correctly.

Yes — Replace the I/D unit.

- Has this error been recovered?
  - • Yes — End

Caution: After replacing the I/D unit, reset the drum counter. (Refer to "Rplacing the Drum Cartridge" in "Users Manual".)

No — Is the LED head installed correctly?
Check the HEAD connector of the main control board.

- • No — Contact the LED head correctly.

Yes — Replace the LED head

- Has this error been recovered?

- Yes — End

Caution: Set the LED head drive time when replacing the LED head. (See Section 4.2.1.)

No — Replace the main control board, high-voltage power supply board(P3H) or high-voltage power supply board(P6L).

⑦ Poor fusing

- Is the specified paper being used?
  - No — Use the specified paper. (xerox 4200 (20 lbs))
- Yes — Is the bias spring normal? (Tension: 3.25 kg)
  - No — Replace the bias spring.
- Yes — Are the heater connector of the heat assy and the CN1 connector of the power supply unit connected correctly.
  - No — Connect the connectors correctly.
- Yes — Replace the heat assy.
- Has this error been recovered?
  - Yes — End
- No — Replace the main control board or high-voltage power supply board(P3H).

⑧ Vertical white belt/stripe

• Is the lens of the LED head dirty?

• Yes Clean the LED head.

No Is the contact plate of the transfer roller in correct contact with the high-voltage power supply board(P3H)? (See Figure 6-4 Ⓔ.)

• No Contact the contact plate of the transfer roller correctly.

Yes Replace the transfer roller.

• Has this error been recovered?

• Yes End

No Is the LED head installed correctly?
Check the HEAD connector of the main control board.

• No Install the LED head correctly.

Yes Replace the LED head.

• Has this error been recovered?

• Yes End

Caution: Set the LED head drive time when replacing the LED head. (See Section 4.2.1.)

Yes Replace the I/D unit.

• Has this error been recovered?

• Yes End

Caution: After replacing the I/D unit, reset the drum counter. (Refer to "Replacing the Drum Cartridge" in "User's Manual".)

No Replace the main control board, high-voltage power supply board(P3H) or high-voltage power supply board(P6L).

Contents

Ⓐ: Toner Supply Roller
Ⓑ: Developing Roller
Ⓒ: Charge Roller
Ⓓ: Cleaning Roller
Ⓔ: Transfer Roller
Ⓕ: Heat Roller

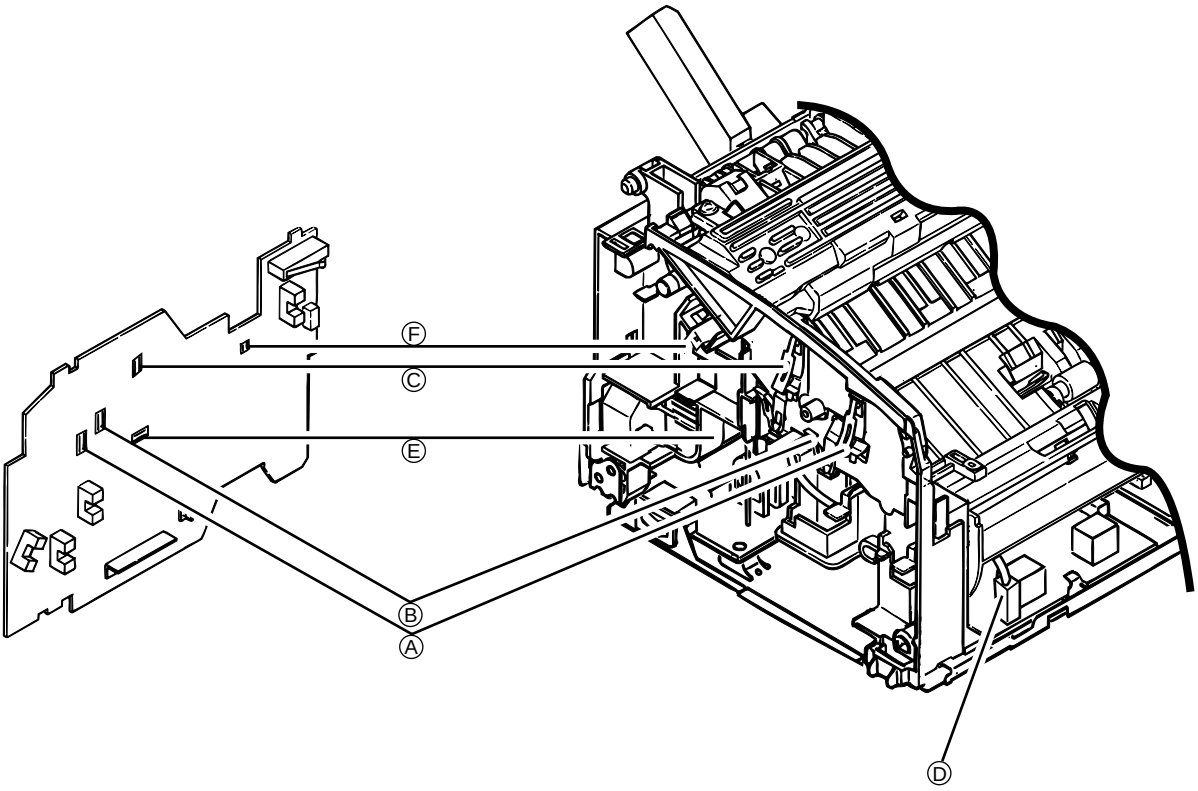


Figure 6-4

Contents

Ⓐ: Toner Supply Roller
Ⓑ: Developing Roller
Ⓒ: Charge Roller
Ⓓ: Cleaning Roller
Ⓔ: Ground (Drum)

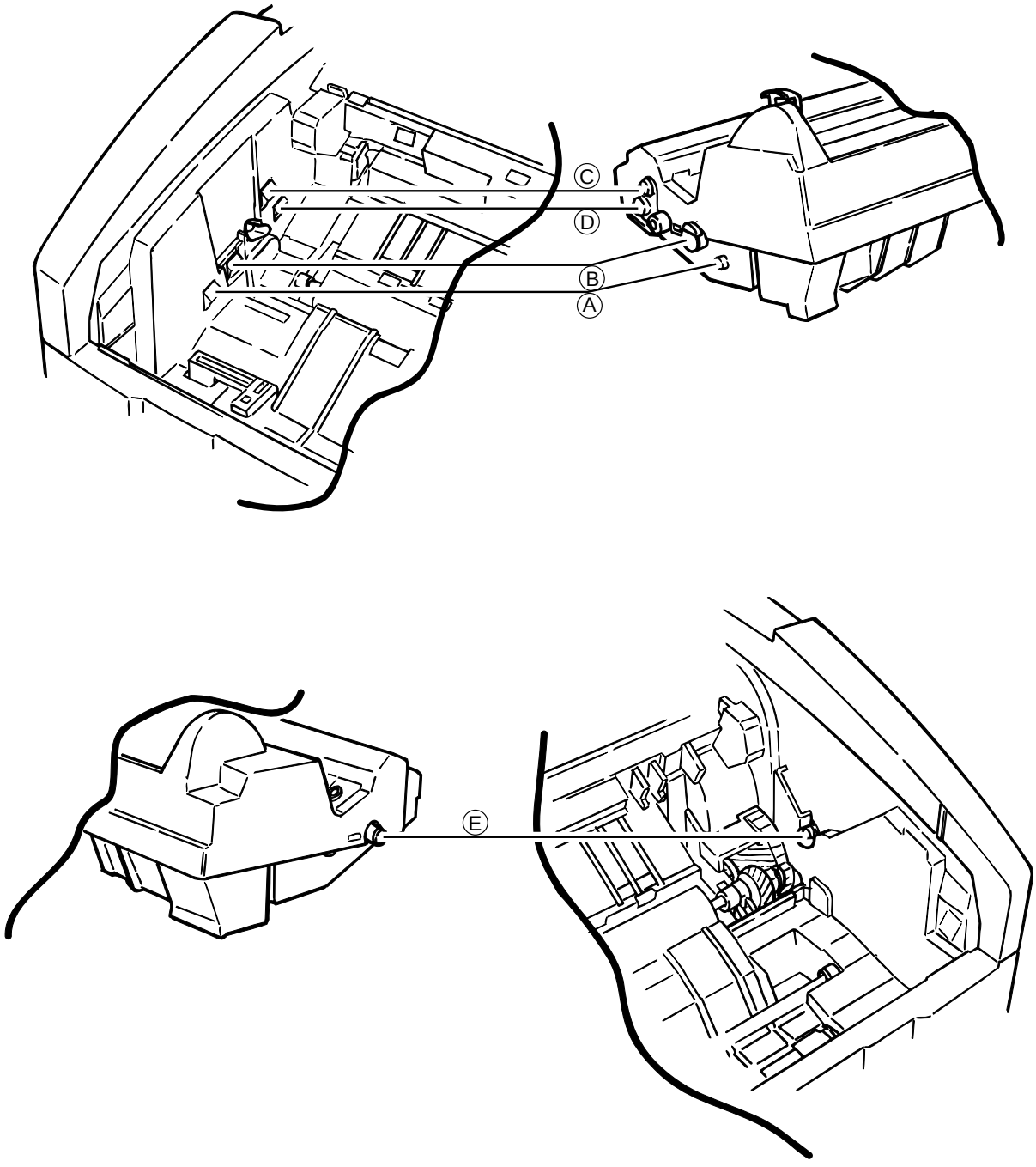
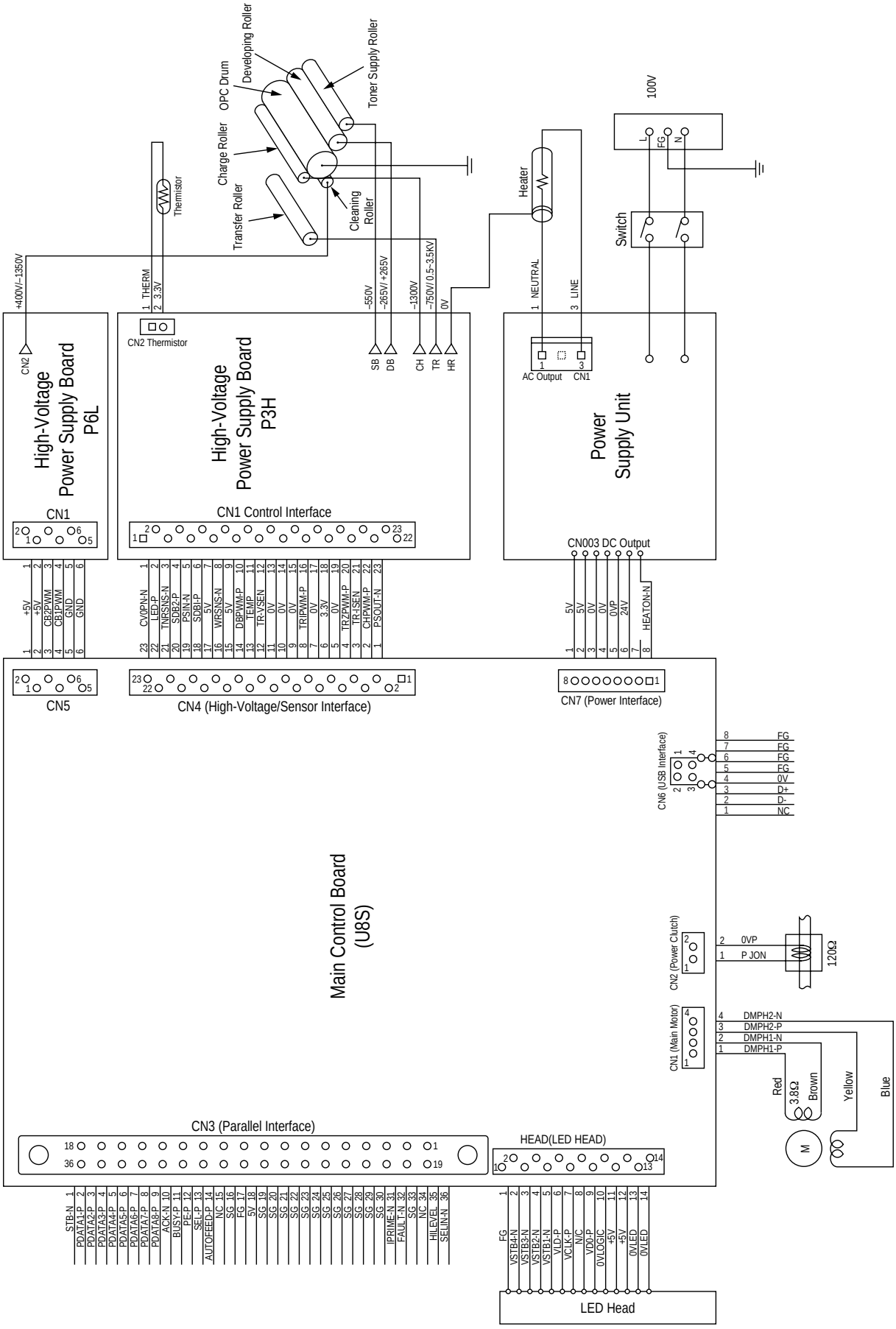


Figure 6-5

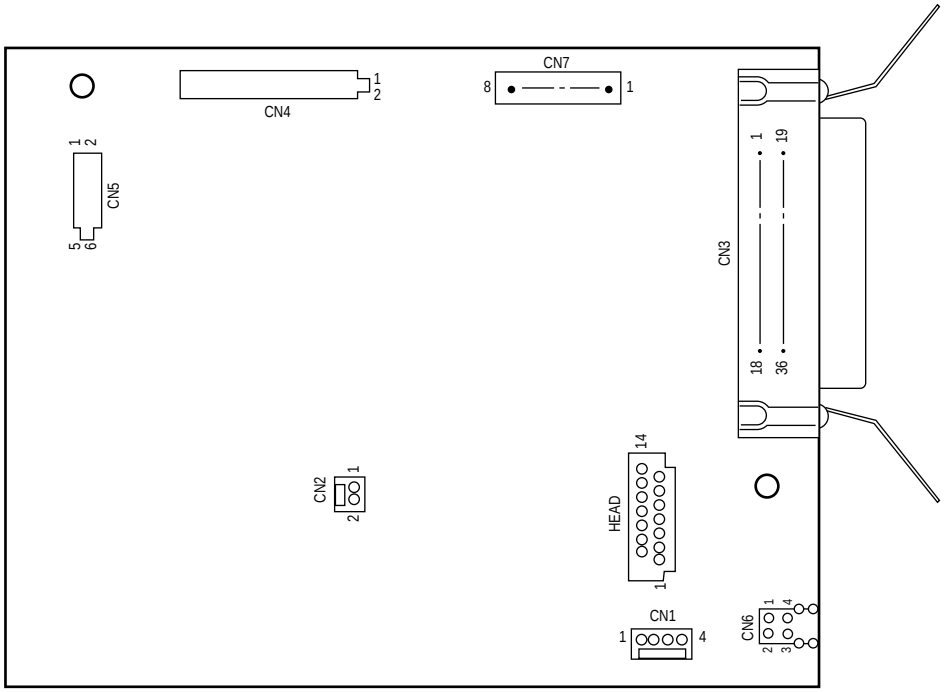
7. WIRING DIAGRAM

7.1 Interconnect Signal Diagram

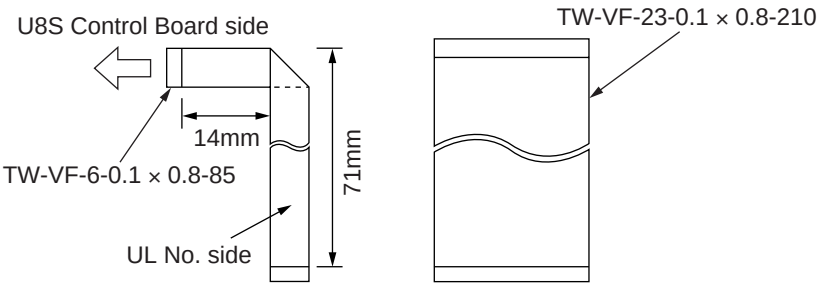


7.2 PCB Layout

7.2.1 Main Control Board (U8S PCB)



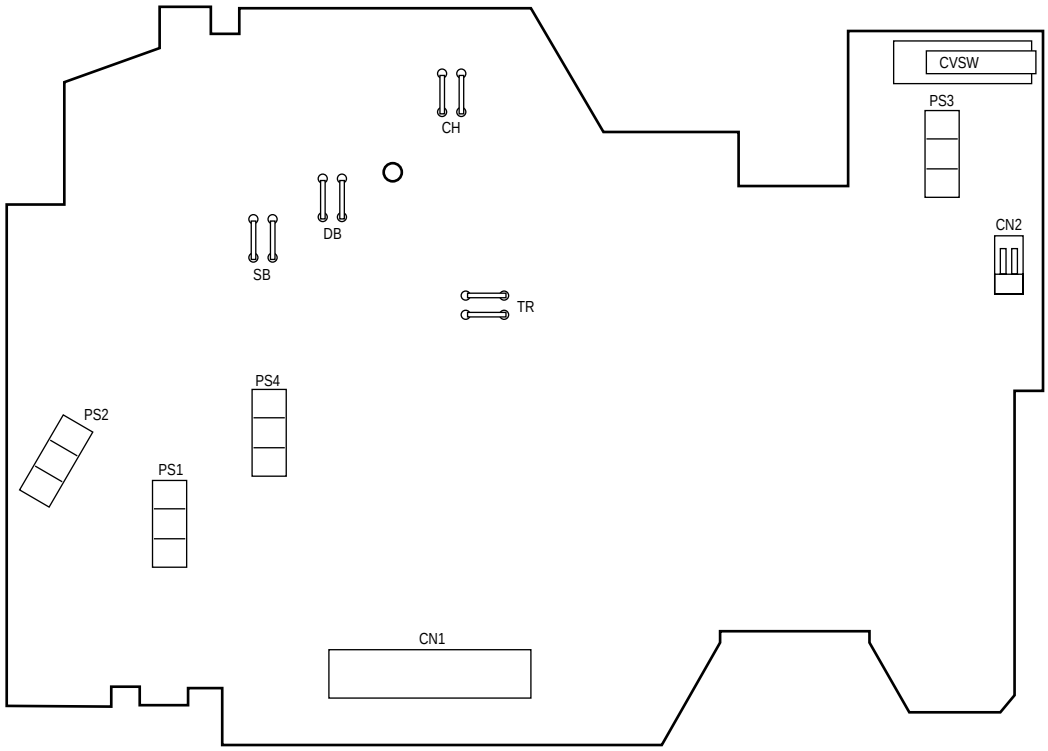
Flat Cable



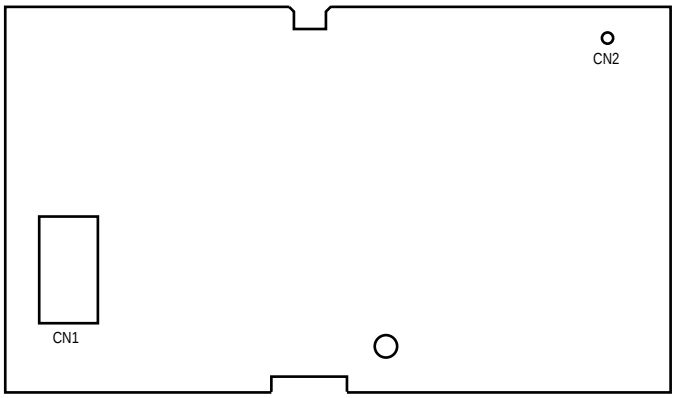
Note: When the Flat Cable is damaged, order a new one.
For a description of a method for inserting a new Flat Cable, see the insertion and bending methods of the old Flat Cable attached to the old board.

7.2.2 High-Voltage Power Supply Board

P3H



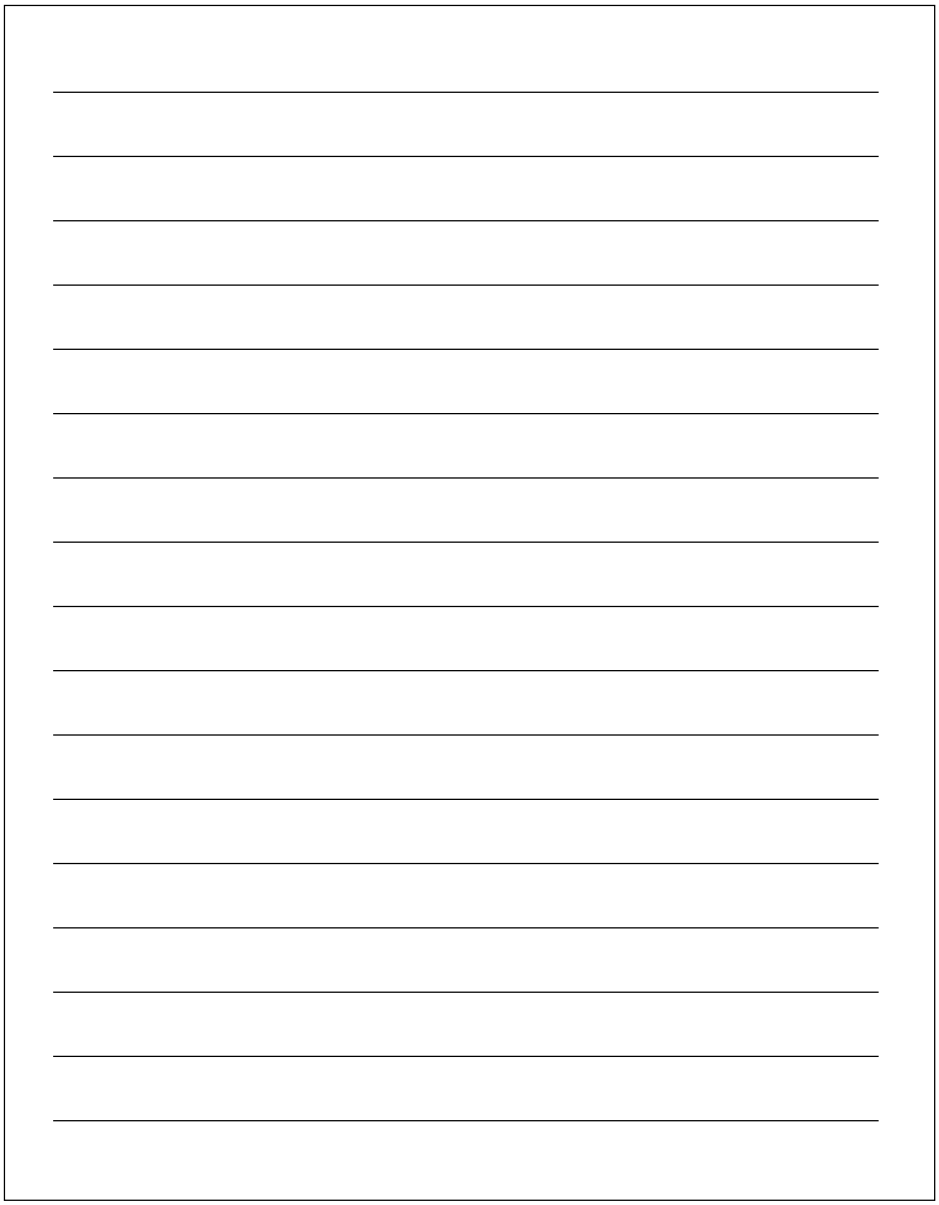
P6L



APPENDIX A LOCAL PRINTING/ DEMO PAGE PRINTING

The following operation enables the OKIPAGE 8w Lite/8z to print data by itself.

With the cover open, turn on the AC switch and then close the cover. The following print patterns are printed.



APPENDIX B PARALLEL INTERFACE

(1) Connector

- Printer side : 36-pin receptacle
  Type: 57-40360-12-D56 (made by Daiichi Denshi) or equivalent
- Cable side : 36-pin plug
  Type: 57-30360 (made by Daiichi Denshi) or equivalent
  Plug-552274-1 (AMP), 552073-1 (AMP) or equivalent

(2) Cable

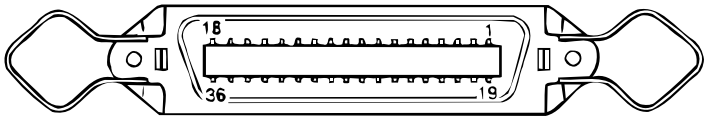
- Cable length : 6 feet (1.8 m) max.
  (IEEE std 1284-1994 compliant is recommended for noise prevention.)

Note : Cable is not supplied.

(3) Parallel I/F signals

Pin No.	Signal Name	Signal Direction	Logic	Compatible	Nibble	ECP	Functions
1	Data Strobe	→ Printer	Negative	nStrobe	Host Clk	HostClk	Data strobe
2 ~ 9	Data Bit n	↔ Printer	Positive	Data 1(LSB) ~ 8(MSB)			Data line from/to host
10	Acknowledge	Printer →	Negative	nAck	PtrClk	PeriphClk	Completion of reception or function
11	Busy	Printer →	Positive	Busy	PtrBusy	PeriphAck	Data reception not possible
12	Paper End	Printer →	Positive	PError	AckDataReq	nAckReverse	No paper
13	Select	Printer →	Positive	Select	Xflag	Xflag	On-line
14	Auto Feed	→ Printer	Negative	nAutoFd	HostBusy	HostAck	Mode switch request
15	–	–	–		Not defined		Not used
16	0V	–	–		Logic Gnd		Signal ground
17	Chassis Ground	–	–		Chassis Gnd		Frame ground
18	5V	Printer →	–		Peripheral Logic High		Power supply (max. 50mA)
19	0V	–	–		Signal Ground (nStrobe)		Signal ground
20 ~ 27	0V	–	–		Signal Ground (Data 1 ~ 8)		Signal ground
28	0V	–	–		Signal Ground (PError, Select, nAck)		Signal ground
29	0V	–	–		Signal Ground (Busy, nFault)		Signal ground
30	0V	–	–		Signal Ground (nAutoFd, nSelectIn, nInit)		Signal ground
31	Input Prime	→ Printer	Negative	nInit	nInit	nReverseRequest	Initialize
32	Fault	Printer →	Negative	nFault	nDataAvail	nPeriphRequest	Error occurrrence, On-line
33	0V	–	–		Not Defined		Signal ground
34	–	–	–		Not Defined		Not used
35	–	Printer →	–		Not Defined		Fixed to logic "1"
36	Select In	→ Printer	Negative	nSelectIn	1284 Active	1284 Active	Mode switch request

• Connector pin arrangement



(4) Signal level

• INPUT
Low : 0V to +0.8V
High : +2.0V to 5.0V

• OUTPUT
Low : 0V to +0.8V
High : +2.4V to 5.0V

(5) Modes
IEEE 1284
• Compatible mode
• Nibble mode
• ECP mode

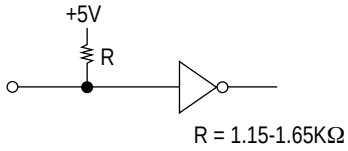
(6) Data bit length
8 bits

(7) Receive buffer
2044K Bytes

(8) Control
Data is received from the host, and stored in the reception buffer. Block busy control is carried out. Signal line control is also carried out.

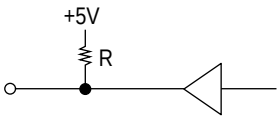
(9) Interface circuit

a) Receiving circuit



R = 1.15-1.65KΩ

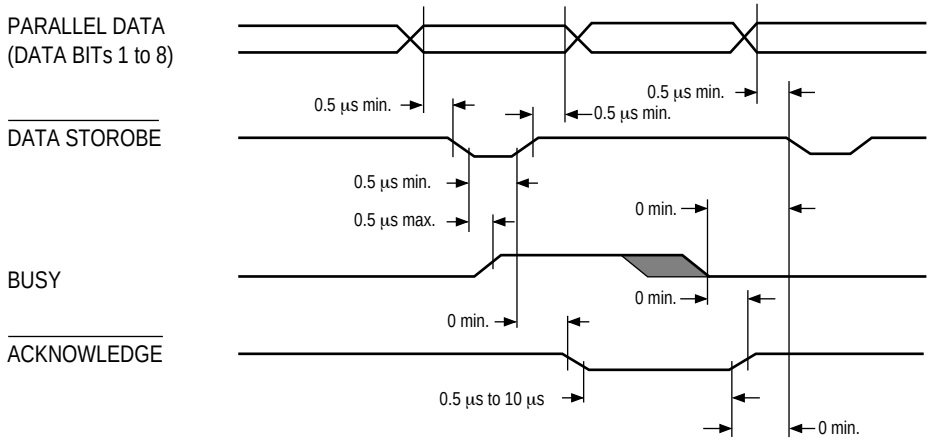
b) Sending circuit



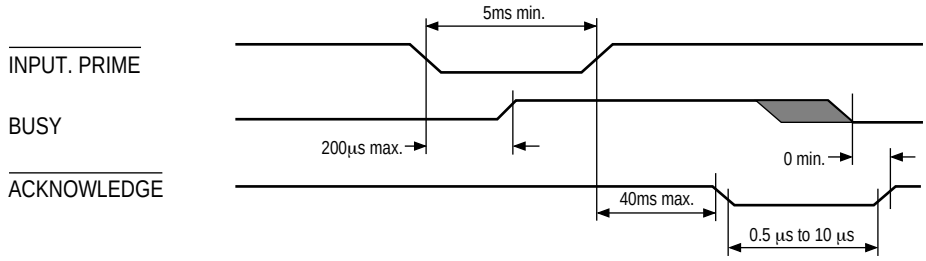
(Open Drain : R=1.15-1.65KΩ)

(10) Timing charts

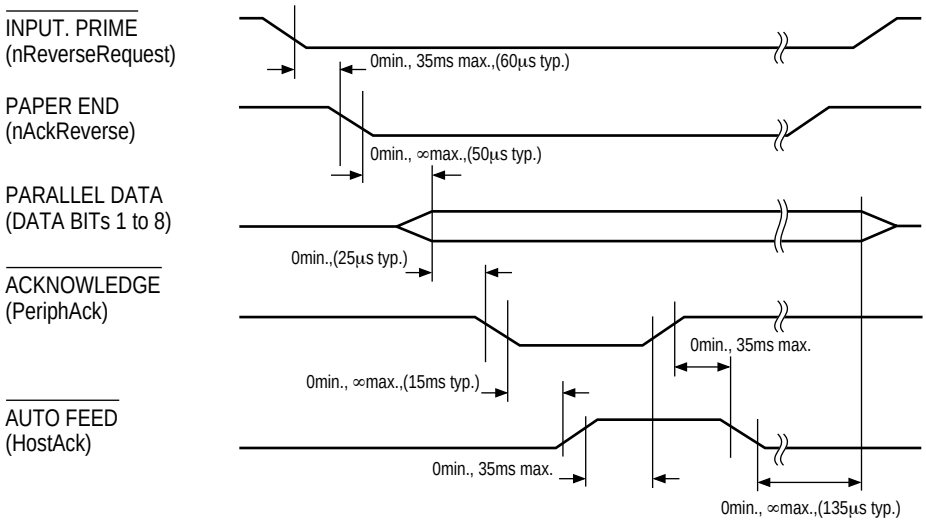
a) Data receiving timing (Compatibility mode)



b) INPUT PRIME timing (when set to the effective INPUT PRIME signal.)



c) Data sending timing (ECP Reverse mode)



APPENDIX C UNIVERSAL SERIAL BUS (USB)

Universal Serial Bus Specification Revision 1.0 compliance.

1) Connector

- Printer Side : “B” Receptacle (Upstream Input to the USB Device)
- Cable Side : Series “B” Plug

2) Cable

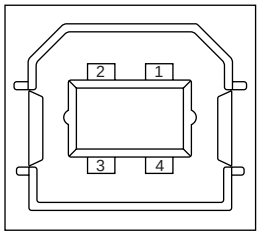
- Cable Length : Approx 1.8m (A cable must be met USB Spec Rev 1.1 for normal operation)

Note: Cable is not supplied.

3) Table of USB I / F signals

Contact Number	Signal Name	Typical Wiring Assignment
1	Vbus	Red
2	D -	White
3	D +	Green
4	GND	Black
Shell	Shield	Drain Wire

4) Connector pin arrangement



5) Mode & Class of Device

- Full - speed Driver
- Self - powered Device

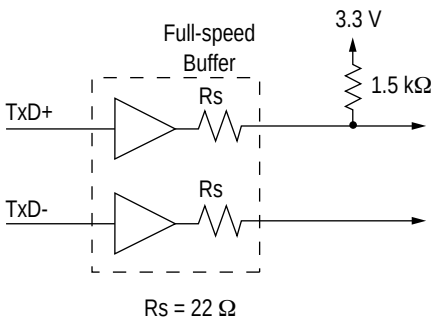
6) Data Signaling Rate

- Full - speed function - 12Mb/s ± 0.25%(2500ppm)

7) Receive Buffer

- 2044K Bytes

8) Interface circuit



9) Signal Level

- Input / Output Level

Parameter	Symbol	Min.	Max.	Units
Input Levels :				
High (driven)	V_{IH}	2.0		V
High (floating)	V_{IHZ}	2.7	3.6	V
Low	V_{IL}		0.8	V
Output Levels :				
Low	OL	0.0	0.3	V
High (driven)	OH	2.8	3.6	V
Output Signal Crossover Voltage	V_{CRS}	1.3	2.0	V

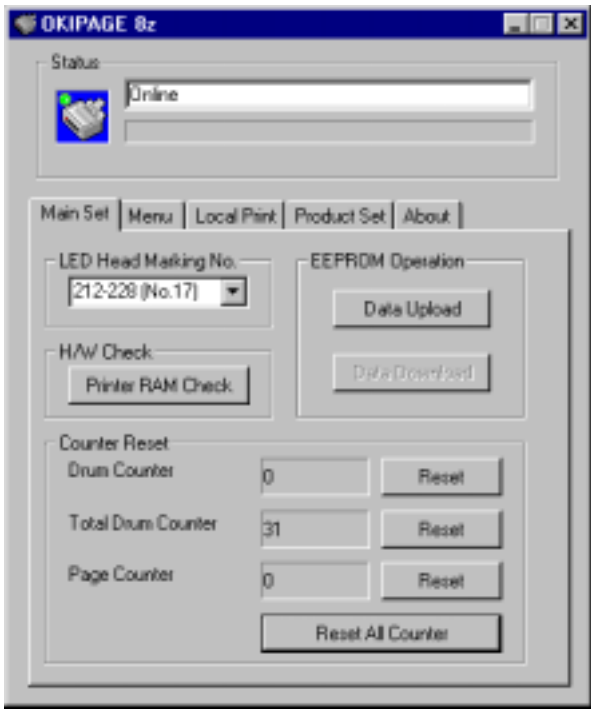
APPENDIX D MAINTENANCE UTILITY MANUAL

Overview

This manual describes the details of GUI for the maintenance utility corresponding to OKIPAGE 8w Lite/8z.
However, as disable section is not used in this printer, its explanation will be omitted.

1. Main Set Property Sheet

The following figure shows an example of the Main Set Property Sheet display.



Setting items have the following meanings, respectively.

1.1 LED Head Marking No.

An item to control the exposure time of LED Head. Has commonalities with Engine Menu Property Sheet. Takes effect at the time when any setting item is selected.

1.2 H/W Check

(1) Printer RAM Check (OP8p Plus does not support this)
Sends the RAM Check command to check free memory area used for a raster buffer and receiving buffer including option RAM. Waits for a response after the command is issued and displays the result in a dialog box.

1.3 EEPROM Operation

(1) EEPROM Upload
Loads and Stores a currently connected printer's Engine Menu in memory.
Enables the "EEPROM Download" button after the completion of the storage.
The loaded Menu data is retained when the printer is changed. Engine Menu is not executed when a different printer is connected after one-time "connection error." Consequently, porting Menu data to another printer is enabled.

(2) EEPROM Download
Sends a command to a printer to program an EEPROM with Engine Menu, which is stored in memory when the "EEPROM Upload" button is selected. Disables the button after the command is sent.

1.4 Counter Reset

The engine counter group displays and initializes the following counter values.
Data to be initialized shall be established in a registry when the maintenance utility is installed.

(1) Drum Count
Displays the number of EP drum revolutions.

(2) Total Drum Count
Displays the total number of EP drum revolutions after shipment.

(3) Page Count
Displays the total number of pages printed after shipment.

(4) Reset Button
Brings up a message box at the click of the button and, before each registry-preset value (Drum/ Total Drum/ Page Count values) is established in a printer, allows the user to confirm the execution of counter reset. The default value is 0/31/0.

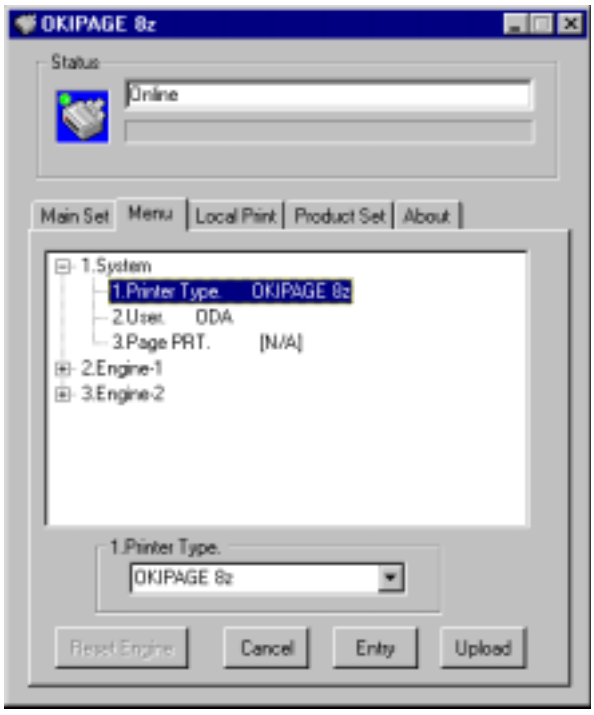
Note: Page Count disables the "Reset" button when the fixed number of pages is exceeded. After that, the resetting cannot be performed.
The number of pages, which is to be established in a registry, is initially 500.

(5) Reset All
Opens a message box with the click of the button and, before all set values in the initialization file (Drum/ Total Drum/ Page Count values) are established in a printer, allows the user to confirm the execution of counter reset.

If a counter read command is sent immediately after a counter reset command is sent, a response to that command may not be reset, and each counter's message box to appear to inform a user of EEPROM write error.
If a connected printer does not support the reading of any counter value, a relevant item can be dimmed (grayed out) as non-selectable, causing the "Reset" button to be disabled.
To determine where the reading is available or not, commands for reading all the counter values are sent. An item on which there is a response is defined as a support item.

2. Menu Property Sheet

The following figure provides an example of the Menu Property Sheet display.



(1) Set Item Display Tree View
Displays setting item names and a list of currently set values. An item with [N/A] in its set value indicates that it is not supported. On that item, there has been no response when a set value read command is sent.
(See the setting items list for setting items.)
Clicking on a setting item opens a set-value-selecting dialog.

(2) Configuration Dialog for Selecting Set Value
Displays this dialog on an item-by-item basis (the LED Head Marking No. combo boxes in the example of the display).
Clicking on a set value makes the selection. The selected value takes effect only when another set value is selected in the “Set Item Display Tree View.” However, the set value is not established in a device.

(3) Reset Engine Button
Sends an engine reset command to a device. After that, all set values are loaded again.

(4) Cancel Button
Disables all changes which have been made after the Property Sheet appears. However, accessing the device side by use of the button is controlling.

(5) Entry Button
Records a currently displayed set value in a device. GUI set values in the engine menu group affect a printer.
Selecting the “Entry” button sends all menu item set commands irrespective of whether change is made to the all menu item GUI display (user-definable) information to be read.

(6) Upload Button
Reads a currently set value established in a device to display the value again.

2.1 Setting Items

(1) Setting Items

The following menu items are displayed on Menu from which settings are changed.

Menu	Item	Words displayed	Setting Item Detail
1.System	1	Printer Type	Specifies the applicable model(s).
	2	User	Specifies the destination(s).
	3	Page PRT	Selects Page Count printing “Enable” or “Disable” in menu printing.
2.Engine-1	1	LED Head Marking No.	Adjusts the exposure time of LED Head.
	2	Head Type	Specifies the correction method of the correction head at 600 DPI.
	3	Strb Time	Specifies the strobe time.
	4	Optical Head	Selects single line (non-correction) type or double line (correction) type for the LED Head data line.
	5	Print Position	Corrects the print start position.
3.Engine-2	1	Setting	Adjusts the transfer current value.
	2	LED Head Width	Specifies the number of physical dots in LED Head.
	3	Wait Table	Selects 150°C or 135°C for wait temperature.
	4	Engine Speed	Specifies the engine speed.

(2) Supported Items Lists by Language

Menu No.	Setting Item	OP8z	OP8w Lite
		PN251	PN251
1-1	Printer Type User	○	
1-2	Setting Range	ODA/INTA/INTL	
	Default	ODA	OEL
1-3	Page PRT	×	×
	Setting Range	DISABLE/ENABLE	
	Default		
2-1	LED Head Marking No.	○	○
	Setting Range	600DPI: 155- to -020 (No. 1 to No. 32) 300DPI: 505-545 to 066-069 (No. 1 to No. 32) (Note 1)	
	Default	No.17	
2-2	Head Type	×	×
	Setting Range	TYPE1/TYPE2D2/TYPE2D4	
	Default		
2-3	Strb Time	○	○
	Setting Range	0.54, 0.50, 0.46, 0.42	
	Default	0.50 (Note 2)	
2-4	Optical Head	○	○
	Setting Range	300-1W(non-correction)/300-2W(correction)/600-STEP1/600-STEP2	
	Default	300-1W	300-1W
2-5	Print Position	○	○
	Setting Range	-4.00mm to +3.5mm	
	Default	0.00mm	
3-1	Setting	○	○
	Setting Range	+2 to -2	
	Default	0	
3-2	LED Head Width	×	×
	Setting Range	Full (2560 dots) /Narrow (2496 dots)	
	Default	Full (Note 3)	
3-3	Wait Table	×	×
	Setting Range	Normal/Low Level	
	Default		
3-4	English Speed	×	×
	Setting Range	6ppm/8ppm	
	Default	8ppm (Note 4)	

Note: 1. The meanings of set values in the LED Head Marking No. differ according to which Optical Head is selected.
The following table shows set values and their meanings.

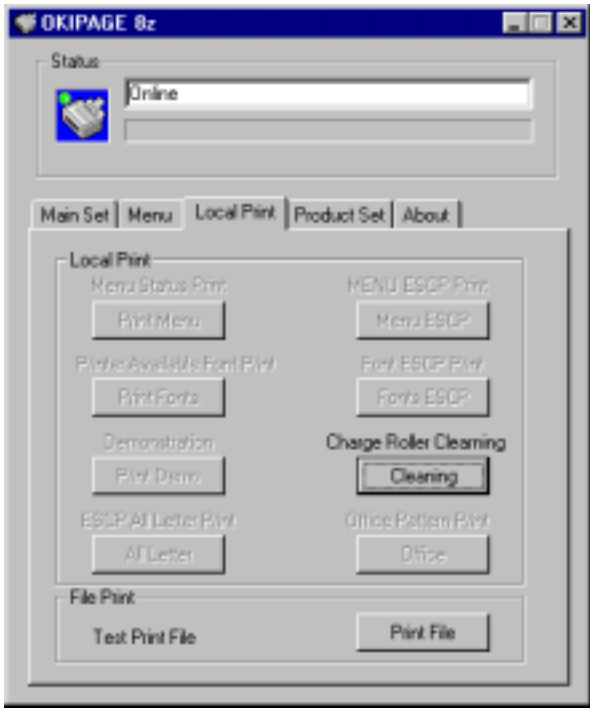
LED Head Marking No. Setting Table

No.	Optical Head 600DPI	Optical Head 300DPI
	Standard	Standard
No.1	155-	
No.2	145-154	
No.3	136-144	
No.4	127-135	
No.5	119-126	
No.6	111-118	505-545
No.7	104-110	466-504
No.8	097-103	431-465
No.9	091-096	398-430
No.10	085-090	368-397
No.11	080-084	346-367
No.12	074-079	314-339
No.13	070-073	291-313
No.14	065-069	269-290
No.15	061-064	248-268
No.16	058-060	229-247
No.17	053-057	212-228
No.18	050-052	196-211
No.19	047-049	181-195
No.20	044-046	168-180
No.21	041-043	155-167
No.22	038-040	143-154
No.23	036-037	132-142
No.24	033-035	122-131
No.25	031-032	113-121
No.26	029-030	105-112
No.27	027-028	097-104
No.28	026-	089-096
No.29	025-	083-088
No.30	022-024	077-082
No.31	021-	070-076
No.32	-020	066-069

2. Unassigned in 300-DPI head.
3. Changeable. Set values unassigned.
4. Unchangeable

3. Local Print Property Sheet

The following figure provides an example of the Local Print Property Sheet.



(1) Local Print

Sends a local print command at the click of the button. Applicable models are as follows:

No.	Item	Applicable Model	
		OP8z (PN251)	OP8w Lite (PN251)
1	Menu Status Print		
2	Demonstration		
3	Printer Available Font Print		
4	Charge Roller Cleaning Print	○	○
5	ESCP Menu Status Print		
6	Printer Available ESCP Font Print		
7	ESCP Japanese All letter size Print		
8	Japanese Office Pattern Print		

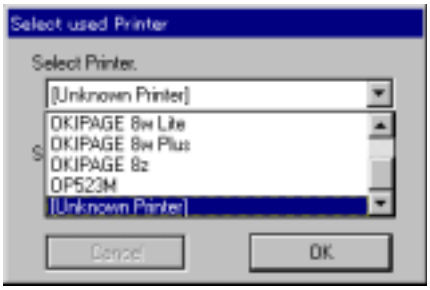
(2) Test File Print

Opens a dialog box (Windows API) for file selection and waits for a printing file to be entered by an operator.
The selected file is sent as-is.

A language-specific extension is supplied with each file.

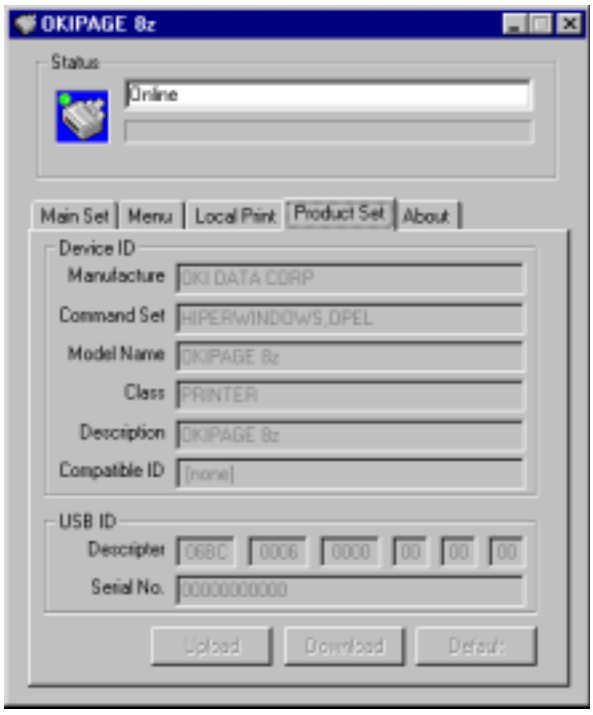
- PRN for PJL Language
- HBP for OPEL Language

Here is an example of the file-selecting dialog box display.



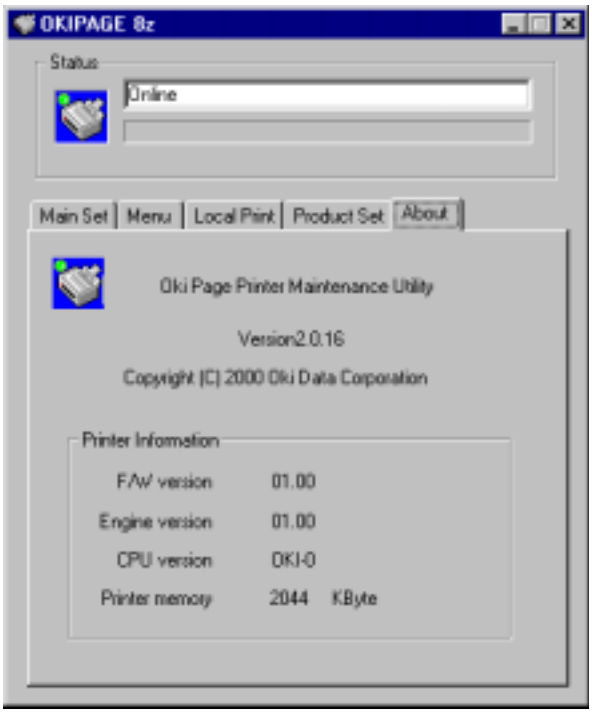
4. Product Set Property Sheet

Device ID and USB ID are displayed on Product Set Property Sheet.



5. About Property Sheet

About Property Sheet shows maintenance utility and printer firmware information.



(1) About

Display	Description
Oki Page Printer Engine Maintenance	Version Number of This Application

(2) Printer Information

Display	Description
F/W version	Version Number of Connected Printer F/W
Engine version	Version Number of Connected Printer engine F/W
CPU version	Information on CPU Equipped with Connected Printer
Printer memory	Free Memory Size of Connected Printer